

THE SECOND WORLD CONFERENCE ON ACADEMIC EXCHANGE OF MEDICAL QIGONG

(ABSTRACTS OF PRESENTATIONS)



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目 录

1. 气功的基础实验研究

1-1 人体功能状态的综合集成研究	余和琤等(1)
1-2 气功状态下生理反应的动态特征	宋孔智等(2)
1-3 建立在现代物理化学基础上联系非生物与生物世界的健康模型	A. Dorigo 等(3)
1-4 气功疗法机理的现代科学研究	森 和等(4)
1-5 在练功一年过程中脑电相干函数的变化	杨斯环等(4)
1-6 对气功状态下气功师的生理现象及其它的测定	町好雄等(5)
1-7 头低位卧床时练气功改善血液头胸方向转移的可能性研究	侯书礼等(6)
1-8 超导生物磁强计对气功态下磁信号的研究	吴本玠等(6)
1-9 克尔连图象	R. H. Lee(7)
1-10 气功调息时植物性神经功能的影响及其机制探讨	张金梅等(7)
1-11 气功锻炼对急进高原群体心功能障碍预防作用的机理研究	莫非凡等(8)
1-12 气功对高原移场飞行员微循环障碍预防作用的研究	莫非凡等(9)
1-13 元极功对大学生身心健康和运动能力影响的研究	吴汉荣等(9)
1-14 气功意念对调息作用的影响	孙福立等(10)
1-15 气功对消化道功能影响的实验研究	于 敏等(11)
1-16 气功调节人体循环系统作用的研究	包国金等(11)
1-17 气功对心脏功能的影响	黄作福 (12)
1-18 模拟气功状态下阶跃式呼吸模式对心血管功能的影响	牛 欣等(13)
1-19 太极拳对经络波的作用	毛明春 (13)
1-20 有关气功功力检测情况研究之二 练功者体表穴位特征能量检测的应用研究	冯理达等(14)
1-21 气功态的红外现象与血容积关系的探讨	陈文华等(14)
1-22 应用表面肌电图来检测次声气功仪对肌肉电活动的影响—— 一个双盲,安慰剂对照的研究	R. H. Lee 等(14)
1-23 发音医学气功的科学研究	G. Gori 等(15)
1-24 胃声刺激和足三里的 E. A. V. 测量	V. Genitoni 等(15)
1-25 傅尔电针仪上测量到的气功治疗平衡的效应	K. M. Sancier(16)
1-26 气功:在生物力学之前通过呼吸平衡生物电	R. L. Anglen(17)

- 1-27 气功对性格的影响 汤慈美等(17)
- 1-28 气功对心理健康作用的研究 王极盛 (18)
- 1-29 气功与青年人智力及人格因素的相关性调查 刘天君等(20)
- 1-30 智能气功对大学生记忆力影响的研究 潘克良等(20)
- 1-31 气功外气对微生物生物效应的研究 刘自镛等(21)
- 1-32 气功外气与物化因子对棘孢小单孢菌原生质体诱变的比较研究 刘自镛等(21)
- 1-33 气功外气治疗脊髓损伤的重复实验研究
——小型实验猪临床研究 万苏建等(22)
- 1-34 内气外放对神经膜钠通道开关动力学的调制作用 刘安西等(22)
- 1-35 气功“外气”对正常受试者脑电影响的功率谱研究 李德松等(24)
- 1-36 用脑电图观察气功的暗示效果 河野贵美子(24)
- 1-37 气功对实验性炎症及中性粒细胞化学发光的作用 严仪昭等(25)
- 1-38 气功外气在培养神经细胞自由基损伤中的保护作用 唐一鹏等(26)
- 1-39 气功态下人体场对血瘀大鼠红细胞的结构与功能的影响 刘春梅等(26)
- 1-40 流式细胞分光光度法分析气功“外气”对人体肝癌细胞
(BEL-7402)的影响 陈元凤 (27)
- 1-41 气功“外气”对人体肺腺癌细胞(SPC-A1)CA 凝集
反应效应的研究 陈元凤 (27)
- 1-42 气功外气、 γ 射线对体外培养的人鼻咽癌细胞的抑制作用 曹弃元等(28)
- 1-43 气功外气对卡氏肺孢子虫实验动物感染影响的初步研究 张金梅等(28)
- 1-44 气功外气对人鼻咽癌细胞株裸鼠成瘤的双盲试验 陈小君等(29)
- 1-45 气功外气对瘤瘤生长、转移及宿主存活时间影响的实验研究 钱书森等(30)
- 1-46 气功外气对小鼠肿瘤防治效果的观察(之一) 冯理达等(30)
- 1-47 外气对小鼠 MO_4 肿瘤的治疗作用 钱书森等(31)
- 1-48 气功外气对红细胞免疫粘附肿瘤细胞功能的研究 冯理达等(31)
- 1-49 气功外气对小鼠脑皮质损伤引起其 K 细胞的抗体依赖细胞介导的
细胞毒作用(ADCC)影响的研究 周 勇等(32)
- 1-50 气功外气对应激小鼠免疫功能的调整作用 张 丽等(32)
- 1-51 气功外气对小鼠生长作用的观察 冯理达等(33)
- 1-52 穴位贯气对猫足三里刺激皮层诱发电位的影响 崔荣庆等(33)
- 1-53 关于利用气功师及外气信息模拟装置促进植物种子发芽、生长的
基础实验 仲里诚毅等(34)
- 1-54 气功外气对重水作用的红外光谱法研究 叶芳扬等(35)
- 1-55 意念、气的物质效应——激光拉曼谱试验 陈国光 (35)
- 1-56 气功“外气”对活泼质子化学位移的影响 赵 静等(36)
- 1-57 气功“外气”对高温超导材料特性的影响 霍玉华等(36)
- 1-58 DNA 分子在气功外气或纯意念力作用下的增色效应及减色
效应研究 李陆英等(37)

- 1—59 外气对苹果酸脱氢酶效应的研究 张丰德等(37)
 1—60 气功麻醉的原理与实例 吉见猪之助(38)

2. 气功的临床研究

- 2—1 宏扬有我国特色的老年保健事业 冯理达 (39)
 2—2 气功缓解心脑血管危险因素影响、预防脑卒中的研究
 ——242 例高血压患者 30 年随访 王崇行等(39)
 2—3 气功对高血压靶器官损害康复作用的研究 徐定海等(40)
 2—4 高血压病练功降压及减停降压药的初步观察 吴人照等(41)
 2—5 导引吐纳功治疗 158 例脑动脉硬化症的临床观察 刘元亮等(41)
 2—6 气功治疗原发性高血压 30 例 C. Bornoroni 等(42)
 2—7 高血压病患者,练功要谨慎 张天戈等(42)
 2—8 气功治疗 21 例肾病的报告 吕广君等(42)
 2—9 自控气功疗法增强癌症患者机体的免疫功能 于 一等(43)
 2—10 气功配合常规治疗癌症的临床研究 王守章等(44)
 2—11 智能气功治疗 122 例肿瘤疗效分析 边境南等(44)
 2—12 气功治疗 30 例癌症临床观察 王 寅 (45)
 2—13 中西医、气功三结合治疗癌症 120 例临床影像疗效观察 丛 景等(45)
 2—14 气功加中药治疗老年人晚期胃癌 傅敬直 (46)
 2—15 从脏器的医学到“场”的医学 带津良一(46)
 2—16 气功治疗慢性乙型肝炎 75 例临床研究 沈福道等(47)
 2—17 回春功治疗糖尿病(Ⅱ型)31 例疗效观察 靖玉仲等(48)
 2—18 辨证施治气功偏差综合征 52 例临床分析 吕立江 (48)
 2—19 推拿气功治疗 267 例颈椎病临床分析 李兴广 (49)
 2—20 外气手法治疗腰腿痛疗效观察 黄孝宽等(49)
 2—21 气功抗衰老的临床研究 徐荷芬等(50)
 2—22 生物全息气功点穴疗法治疗急症的体会 李建华 (50)
 2—23 气功治疗气滞血瘀型头痛 60 例疗效观察 蒋汉苏 (51)
 2—24 防近健脑功防治青少年近视疗效的研究总结报告 黄文国 (51)
 2—25 空劲气功为主治疗干燥综合征 9 例初步疗效观察 乐兆昇等(51)
 2—26 元极功法治耳聩的七次试验 张志祥等(52)
 2—27 运用发射式气功和针灸综合治疗念珠菌病 周 楚 (53)
 2—28 系列气功反馈磁带的研制与应用 张桂芳等(53)
 2—29 用音乐磁带进行气功治疗——气功治疗的新发展 林杰克 (54)
 2—30 对 100 名医生在美国用模拟外气治疗的调查 Y. Z. Fu (55)
 2—31“触气功法”治疗“闪腰”(急性腰扭伤)一考察 野田幸造(56)
 2—32 慢性软组织损伤对气功治疗的反应 B. K. Enrico 等(56)
 2—33 气功护理学基础 小松宽志(57)

3. 气功的传统理论研究

3-1 中国内丹学的理和法	傅立勤 (58)
3-2 中华传统气功的易学原理	王克勤等(59)
3-3《杂病源流犀烛》古气功发掘	宋天彬等(60)
3-4 气功是中医的一门重要分支学科	赵邦柱 (60)
3-5 玄关与玄关效应	赵继承等(61)
3-6 东方悟学与上元归根法	孙泽先 (62)
3-7 气功音乐治疗理论的探索	王万涛 (63)
3-8 中国传统周天功功态层次和判断的探讨	罗 森 (64)
3-9 当代中国医学气功发展方向之探讨	赵连廷等(65)
3-10 气功修身	赵 光 (65)
3-11 脏腑导引功法述略	邱金麟 (66)

CONTENTS

1. Basic Research and Experiment	page
1—1 META-SYNTHETIC INVESTIGATION INTO HUMAN SOMATIC EIGEN- STATES Yu Hefeng et al	67
1—2 DYNAMIC CHARACTERISTICS OF PHYSIOLOGICAL CHANGES UNDER THE QIGONG STATE Song Kongzhi et al	68
1—3 ON HEALTH CONSIDERATIONS TO PROPOSE A MODEL DETERMINED BY MODERN CHEMICO-PHYSICAL BASES TO UNIFICATE THE ABIOT- IC WITH THE BIOLOGICAL WORLD Antonio Dorigo et al	69
1—4 A SCIENTIFIC STUDY OF THE PRINCIPLE OF HEALING BY QIGONG Kazu Mori et al	71
1—5 THE INFLUENCE OF QIGONG TRAINING ON COHERENCE OF EEG DURING ONE YEAR PERIOD Yang Sihuan et al	72
1—6 MEASUREMENT OF PHYSICOLOGICAL PHENOMENA AND OTHERS OF QIGONG MASTERS UNDER THE QIGONG STATE Yoshio Machi	73
1—7 A STUDY OF THE POSSIBILITY OF PUSHING BLOOD FLOW TOWARDS THE HEAD AND CHEST IN THE LYING POSITION WITH THE HEAD ON A LOWER LEVEL DURING QIGONG EXERCISE Hou Shuli et al	74
1—8 THE STUDY OF MAGNETIC SIGNALS UNDER THE QIGONG STATE BY SUPERCONDUCTING BIOMAGNETOMETER Wu Benjie et al	75
1—9 KIRLIAN IMAGING—VISUAL INVESTIGATIONS INTO THE NATURE OF QI AND THE EFFECTS OF QIGONG Richard H. Lee	76
1—10 INFLUENCE ON THE VEGETATIVE FUNCTION AND ITS MECHANISM BY BREATHING HARMONIZATION Zhang Jinmei et al	77
1—11 A STUDY OF PREVENTION OF CARDIAC FUNCTION DISORDER DUE TO IMMEDIATE ENTRY INTO HIGHLANDS BY QIGONG EXERCISE Mo Feifan et al	78
1—12 A STUDY OF PREVENTION OF MICROCIRCULATING DISORDERS OF PILOTS IN HIGHLANDS BY QIGONG Mo Feifan et al	78
1—13 A STUDY OF THE INFLUENCE OF YUAN JI QIGONG ON PHYSICAL AND MENTAL HEALTH OF STUDENTS Wu Hanrong et al	79

1-14	INFLUENCE OF MENTAL ACTIVITY ON THE RESPIRATION REGULATION DURING QIGONG EXERCISE	Sun Fuli et al	80
1-15	EXPERIMENTAL RESEARCHES ON QIGONG' S EFFECT ON THE DIGESTIVE TRACT	Yu Min et al	81
1-16	A STUDY OF QIGONG, HARMONIZING THE HUMAN CIRCULATORY SYSTEM	Bao Guojing et al	82
1-17	THE EFFECT OF QIGONG ON THE HEART FUNCTION	Huang Zuofu et al	83
1-18	THE EFFECT OF THE STEP-LEAP RESPIRATION ON THE CARDIOVASCULAR FUNCTION UNDER THE ANAGOLOUS QIGONG STATE	Niu Xin et al	84
1-19	THE EFFECT OF TAIJIQUAN ON MERIDIAN WAVES	Mao Mingchun et al	85
1-20	A STUDY OF THE DETECTION OF CHANGES IN METABOLIC ENERGY IN A SUPERFICIAL ACUPOINT OF QIGONG EXERCISERS AND ITS CLINICAL SIGNIFICANCE	Feng Lida et al	86
1-21	INFRARED PHENOMENA UNDER THE QIGONG STATE AND BLOOD VESSEL VOLUME	Chai Jianyu et al	86
1-22	USE OF SURFACE ELECTROMYOGRAM TO EXAMINE THE EFFECTS OF THE INFRATONIC QGM, ON ELECTRICAL ACTIVITY OF MUSCLES, A DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY	Richard H. Lee	87
1-23	SCIENTIFIC RESEARCHES ON MEDICAL QIGONG VOCALISATION ...	Gilberto Gori et al	88
1-24	STOMACH VOCAL SOUND STIMULATION AND E. A. V. MEASURE OF ZUSANLI(ST 36)	V. Genitoni et al	89
1-25	THE EFFECT OF QIGONG ON THERAPEUTIC BALANCING MEASURED BY ELECTROACUPUNCTURE ACCORDING TO VOLL(EAV)	Kenneth M. Sancier	90
1-26	QIGONG; BALANCING BIO-ELECTRICITY BY BREATHING BEFORE BIO-KINETICS	R. Lindsay Anglen	91
1-27	THE EFFECT OF QIGONG ON PERSONALITY	Tang Cimei et al	92
1-28	THE ROLE OF QIGONG ON MENTAL HEALTH	Wang Jisheng	93
1-29	A SURVEY OF INTERRELATION BETWEEN QIGONG CONCERNING 1-23 FACTORS OF INTELLIGENCE AND PERSONALITY IN YOUNG PEOPLE	Liu Tianjun et al	95
1-30	INFLUENCE OF QIGONG FOR INTELLIGENCE ON UNIVERSITY STUDENT MEMORY	Pan Keliang et al	95

1—31	A STUDY OF THE BIOLOGICAL EFFECT OF THE EMITTED QI ON MICROBE.....	Liu Zirong et al	96
1—32	A COMPARATIVE STUDY OF THE EMITTED QI AND PHYSICAL-CHEMICALFACTORS ON THE PROTOPLASMIC MUTAGENESIS OF MICROMONOSPORA ECHINOSPORD	Liu Zirong et al	97
1—33	THE REPEATED EXPERIMENTS BY USING THE EMITTED QI IN TREATMENT OF SPINAL CORD INJURY	Wan Sujian et al	97
1—34	MODIFIED EFFECT OF THE EMITTFD QI ON CLOSE-OPEN KINETIC PROCESS OF SODIUM CHANNELS OF RAT CULTURAL NEURON CELL	Liu Anxi et al	98
1—35	SPECTRUM ANALYSIS EFFECT OF THE EMITTED QI ON EEG OF NORMAL SUBJECTS	Li Desong et al	98
1—36	QIGONG'S SUGGESTIVE EFFECT SEEN IN EEG	Kimiko Kawano (Japan)	99
1—37	THE EFFECT OF QIGONG ON EXPERIMENTAL INFLAMMATION AND NEUTROPHIL CHEMILUMINESCENCE	Yan Yizhao et al	100
1—38	PROTECTIVE EFFECT OF THE EMITTED QI ON THE PRIMARY CULTURE OF NEUROCYTES IN VITRO AGAINST FREE RADICAL DAMAGE	Tang Yipeng et al	100
1—39	THE EFFECT OF THE HUMAN ENERGY FIELD UNDER THE QIGONG STATE ON THE STRUCTURE AND FUNCTION OF RED BLOOD CELLS IN EXPERIMENTAL RATS WITH BLOOD STASIS	Liu Chunmei et al	101
1—40	ANALYSIS OF THE EFFECT OF THE EMITTED QI ON HUMAN HEPATOCARCINOMA CELL(BEL-7402)BY USING FLOW CYTOMETRY	Chen Yuanfang et al	102
1—41	THE EFFECT OF THE EMITTED QI ON AGGLUTINATING REACTION OF HUMAN PULMONARY ADENOCARCINOMA CELL (SPC-AL) MEDIATED BY CONA	Chen Yuanfeng et al	102
1—42	INHIBITION OF HUMAN NASOPHARYNGEAL CARCINOMA CELLS IN VITRO BY THE EMITTED QI AND γ -RAY	Cao Qiyuan et al	103
1—43	A PRELIMINARY STUDY OF THE EFFECT OF THE EMITTED QI ON EXPERIMENTAL ANIMALS INFECTED BY PNEUMOCYSTIS CARINII	Zhang Jinmei et al	103
1—44	THE DOUBLE-BLIND TEST OF THE EMITTED QI ON TUMOR FORMATION OF A NASOPHARYNGEAL CARCINOMA CELL LINE IN NUDE MICE	Chen Xiaojun et al	105
1—45	AN EXPERIMENTAL RESEARCH OF THE INFLUENCE OF THE EMITTED QI ON CANCER GROWTH,METASTASIS AND SURVIVAL TIME		

OF THE HOST	Qian Shusen et al	106
1-46 THE EMITTED QI ON MICE TUMOR PREVENTION AND TREATMENT	Feng Lida et al	106
1-47 THE CURATIVE EFFECT OF THE EMITTED QI ON MICE WITH MO ₄ TUMORS	Qian Shusen et al	107
1-48 A RESEARCH ON THE EMITTED QI' S EFFECT ON THE IMMUNE STICKING FUNCTION OF RED BLOOD CELLS TO TUMOR CELLS	Feng Lida et al	108
1-49 THE EFFECT OF THE EMITTED QI ON THE CHANGE OF ANTIBODY DEPENDENCE CELL-MEDIATED CYTOTOXICITY (ADCC) OF K CELL OF MICE CAUSED BY INJURY OF THE LEFT AND RIGHT BRAIN CORTEX	Zhou Yong et al	109
1-50 THE ADJUSTING EFFECT OF THE EMITTED QI ON THE IMMUNE FUNCTION OF COLD-STRESS MICE	Zhang Li et al	109
1-51 AN OBSERVATION OF THE EFFECT OF THE EMITTED QI ON THE GROWTH OF MICE	Feng Lida et al	110
1-52 THE EFFECT OF THE EMITTED QI TO ACUPOINTS ON SOMATOSENSORY EVOKED POTENTIAL RECORDED FROM THE CORTEX FOLLOWING ZUSANLI(St 36)STIMULATION IN CATS	Cui Rongqing et al	111
1-53 BASIC EXPERIMENTS OF ACTIVATION OF SEED GERMINATION AND GROWTH WITH THE EMITTED QI AND ANALOGOUS INSTALMENT OF THE EMITTED QI	Nakasato Seiki et al	112
1-54 THE IR STUDY OF HEAVY WATER TREATED BY THE EMITTED QI	Ye Fangyang et al	113
1-55 THE MATERIAL EFFECT OF MIND AND QI — A RESEARCH WITH THE HELP OF THE LASER LAMAN SPECTRUM ANALYSER	Chen Guoguang	113
1-56 THE EFFECT OF THE EMITTED QI ON THE CHEMICAL SHIFT OF ACTIVE PROTON	Zhao Jing et al	114
1-57 THE EFFECT OF EMITTED QI ON THE HIGHER TEMPERATURE-SUPERCONDUCTIVE MATERIALS	Huo Yuhua et al	115
1-58 A STUDY OF THE HYPERCHROMIC EFFECT AND HYPOCHROMIC EFFECT OF THE DNA UNDER THE EFFECT OF THE EMITTED QI AND THE WILL	Li Luying et al	116
1-59 THE EFFECT OF THE EMITTED QI ON THE REACTION OF MALATE DEHYDROGENASE	Zhang Fengde et al	116
1-60 THE FUNDAMENTAL OF QIGONG ANESTHESIA AND EXAMPLES		

.....	Yoshimi Inosuke	117
1—61 THE RELATION BETWEEN DIFFERENT STAGES OF QUIET QIGONG EXERCISES AND ITS INFLUENCE ON THE ELECTRICAL FIELD AROUND ACUPOINTS	Marcus Bongart et al(Sweden)	117
1—62 THE SIGNIFICANCE OF INTERDISCIPLINARY COLLABORATION FOR STUDYING THE SCIENCE OF QIGONG AS THE CORE CURRICULUM IN AN INTEGRATED, CROSS-CULTURAL STUDY OF CHINESE HUMAN /ENVIRONMENT RELATION,CULTURE AND ART	
.....	Carl H. Hertel	118
1—63 A STUDY OF AAPPLICATION OF COMPUTES TO QIGONG ENERGY	Guo Deyuan	121

2. Clinical Study

2—1 MAKING FURTHER ADVANCES OF THE PUBLIC HEALTH CARE FOR THE AGED WITH CHINESE CHARACTERISTICS	Feng Lida	122
2—2 EFFECTS OF QIGONG ON PREVENTING STROKE AND ALLEVIATING THE MULTIPLE CEREBRO-CARDIOVASCULAR RISK FACTORS—A FOLLOW-UP REPORT OF 242 HYPERTENSIVE CASES FOR 30 YEARS	Wang Chongxing et al	123
2—3 A STUDY OF THE RECUPERATIVE FUNCTION OF QIGONG ON HYPERTENSIVE TARGET IMPAIRMENT	Xu Dinghai et al	124
2—4 A STUDY OF QIGONG ON HYPERTENTION AND REDUCTION OF HYPOTENSOR	Wu Renzhao et al	125
2—5 CLINICAL OBSERVATION ON THE TREATMENT OF 158 CASES OF CEREBRAL ARTERIOSCLEROSIS BY QIGONG	Liu Yuanliang et al	125
2—6 TREATMENT OF 30 CASES OF PRIMARY HYPERTENSION BY QIGONG TECHNIQUES	Corrado Bornoroni et al	126
2—7 PATIENTS OF HYPERTENSION SHOULD EXERCISE QIGONG CAREFULLY	Hou Shuli et al	126
2—8 A REPORT ON 21 CASES OF KIDNEY DISEASES TREATED BY QIGONG	Lu Guangjun et al	127
2—9 THE EFFECT OF SELF-CONTROLLING QIGONG THERAPY ON THE IMMUNE FUNCTION OF CANCER PATIENTS	Zhang Rongmin et al	128
2—10 A CLINICAL STUDY OF THE ROUTINE TREATMENT OF CANCER COORDINATED BY QIGONG	Wang Shouzhong et al	129
2—11 CURATIVE EFFECT ANALYSIS OF 122 TUMOR PATIENTS TREATED BY THE INTELLIGENCE-QIGONG	Zhao Hongmei et al	130
2—12 CLINICAL OBSERVATIONS ON 30 CASES OF CANCER TREATED BY		

QIGONG THERAPY	Wang Ying	131
2-13 CLINICAL IMAGE EXAMINATION TO SEE THE CURATIVE EFFECT OF 120 CANCER CASES TREATED BY CHINESE-WESTERN MEDICINE AND QIGONG THERAPY	Lu Zhong	131
2-14 TREATMENT OF ADVANCED GASTRIC CANCER IN THE AGED BY THE COMBINATION OF QIGONG AND MEDICINAL HERBS	Fu Jingzhi	132
2-15 FROM MEDICINE OF ORGAN TO MEDICINE OF FIELD—10 YEAR EX- PERIENCE OF APPLICATION OF QIGONG TO MEDICAL PRACTICE	Ryoichi Obitsu(Japan)	133
2-16 THE CLINICAL REPORT ON 75 CASES OF CHRONIC HEPATITIS B TREATED BY QIGONG	Shen Fudao	134
2-17 OBSERVATIONS ON EFFECTS OF 31 CASES OF DIABETIS TREATED BY HUICHUGONG	Jing Yuzhong et al	135
2-18 THE TREATMENT AND CLINICAL ANALYSIS OF QIGONG SIDE-EF- FECT	Lu Lijiang	135
2-19 A CLINICAL ANALYSIS OF CERVICAL SPONDYLOPATHY AND ITS REHABILITATION BY TUINA QIGONG IN 267 CASES ...	Li Xingguang	136
2-20 QIGONG'S CURATIVE EFFECT ON LUMBAGO AND JOINT PAIN	Huang Xiaokuan	137
2-21 A CLINICAL STUDY OF THE ANTI-AGING EFFECT OF QIGONG	Xu Hefen et al	137
2-22 BIOHOLOGRAPHIC QIGONG, DIGITAL PRESSURE THERAPY IN THE TREATMENT OF ACUTE CASES	Li Jianhua	139
2-23 THERAPEUTIC EVALUATION OF 60 HEADACHE CASES DUE TO STAGNANCY OF QI AND BLOOD TREATED BY QIGONG	Jiang Hansu	139
2-24 A REPORT ON THE PREVENTION AND CURE OF YOUNGSTER HYPOMETROPIA BY QIGONG	Huang Wengguo	140
2-25 PRELIMINARY OBSERVATIONS OF 9 CASES OF SJOGREN'S SYN- DROME TREATED MAINLY BY "KONG JING CONG"	Yue Zhaosheng et al	140
2-26 SEVEN TESTS OF THE YUAN JI GONG APPLIED TO DEAF-MUTE TREATMENT	Zhang Zhixiang et al	141
2-27 MONILIASIS TREATED BY THE EMITTED QI AND ACUPUNCTURE THERAPY	Chou Chu(Canada)	141
2-28 DEVELOPMENT AND APPLICATION OF A SERIES OF QIGONG FEED- BACK TAPES	Zhang Guifang et al	142

2—29 HEALING WITH QI ENERGY MUSIC ON MAGNETIC TAPE	
.....	Jack Lin(Australia) 143
2—30 A SURVEY OF 100 DOCTORS USING SIMULATED QIGONG IN THE USA	Yuan Zhifu(USA) 144
2—31 A STUDY OF THE TREATMENT FOR SLIPPED DISK	
.....	Kozo Noda(Japan) 145
2—32 CHRONIC SOFT TISSUE INJURY RESPONSE TO QIGONG THERAPY	Bonny K. Enrico et al (USA) 146
2—33 THE BASIS OF QIGONG NURSING	Komatsu Hirochi(Japan) 147
2—34 THE LUOHAN SYSTEM OF QIGONG	G. Garcia(Spain) 147
2—35 EIGHT FORMS-QI-THERAPY	Lee Kang Yuan(Republic of Korea) 148

3. Research on Qigong Theory

3—1 THE THEORY AND METHOD OF THE TRADITIONAL TRAINING OF THE BODY INTERNAL FUNCTION	Fu Liqin 149
3—2 INFLUENCE OF THE STUDY OF THE "BOOK OF CHANGES" ON QIGONG	Wang Keqin 150
3—3 ZA BING YUAN LIU XI ZHU (ON DISTINGUISHING INTERNAL DIS- EASES)—AN EXPLORATION OF THE ANCIENT QIGONG	
.....	Song Tianbin 150
3—4 QIGONG, AN INDISPENSABLE BRANCH OF TRADITIONAL CHINESE MEDICAL SCIENCE	Zhao Bangzhu et al 151
3—5 XUAN GUAN AND XUAN GUAN EFFECT	Zhao Jicheng et al 152
3—6 ON ORIENTAL ENLIGHTENMENTOLOGY & THE WAY OF ROOT-BACK	Sun Zexian 154
3—7 EXPLORATION ON THE TREATING EFFECT OF QIGONG MUSIC	
.....	Wang Wantao 155
3—8 THE LEVEL OF CIRCLE OF QI	Luo Sen 155
3—9 THE DEVELOPING TENDENCY OF CHINESE MEDICAL QIGONG IN CONTEMPORARY TIMES	Zhao Lianting et al 156
3—10 PRACTISING QIGONG AND CULTIVATING MY MORAL CHARACTER	Zhao Guang 157
3—11 A BRIEF ACCOUNT OF DAOYIN QIGONG	Qiu Jiling 157

题 录
Selected Paper Titles

1. 气功与法国 H. FABRE—RINGBORG(法国)
QIGONG AND FRANCE H. FABRE—RINGBORG(FRANCE)
2. 回春功在日本普及活动的报告 羽良多惠子(日本)
REPORT ON POPULARIZATION OF REJUVENESCENCE
PROCESS IN JAPAN HARA TAEKO(JAPAN)
3. 论回春功的养生流程 沈新炎等(中国)
THE PROCESS OF HEALTH CULTIVATION OF “HUI CHUN GONG”
..... SHEN XINYAN ET. AL. (CHINA)
4. 回春功给了我第二次青春 上田正三(日本)
REJUVENESCENCE PROCESS BESTOWS SECOND YOUTH ON ME
..... SHOZO UEDA(JAPAN)
5. 六字五行功 厉誉荣(荷兰)
LIU ZI WU XING GONG LI YURONG (HOLLAND)
6. 吉见式呼吸法 吉见猪之助(日本)
YOSHIMI'S RESPIRATION METHOD

1. 气功的基础实验研究

1-1 人体功能状态的综合集成研究

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1. 从系统科学、协同学、人体科学的理论为指导, 从整体、相互联系、动态、有序的原则出发, 对人体这一开放的复杂巨系统的整体生理机能状态进行了综合集成研究。其目的是为深入开展气功研究, 推广气功的应用, 开创新途径, 提供理论依据和科学方法。

2. 对 202 名健康受试者在醒觉、睡眠、工作、气功、卧床等不同状态及各种负荷条件下进行实验共 1408 次。每次实验都同步、连续观测记录多系统, 多项生理生化指标的动态变化。各次实验均以本人醒觉状态实验的数据为对照。

3. 在大量原始观测数据的基础上, 首先对各指标分别进行必要的预处理, 以压缩数据, 突出系统特点, 进而在数据标准化后, 利用多元分析方法进行宏观、整体、系统和综合处理。

4. 结果表明

可找到少量彼此独立无关, 又能提供大量信息的综合指标, 它们能够代替众多的原始观测指标, 以降低系统相空间的维数, 由它们构成 2~3 维的新的系统相空间;

整个系统的生理机能状态, 可在它自己的系统相空间中用一个生理机能状态点来描述; 利用生理机能状态点在系统相空间中的位置、移动的方向和距离、运动轨迹、振荡和涨落情况, 以及综合指标所反映的生理意义等, 直接地、简单地反映出机体的生理机能状态和自组织自适应过程中的状态特征和系统结构特征。

以多元判别可判定其是否进入某种特定的功能状态。

5. 新建立的一整套综合集成方法, 可以客观地、定量地, 在整体水平上评价人体巨系统所处的生理机能状态; 是否达到某种特定的功能状态; 不同功能状态间的转换机制; 以及人体巨系统的调节品质与适应水平等。

6. 整套方法具有科学的理论基础、严格的数学推导, 和现实的生理意义, 完全可以应用于气功的研究与推广。

1-2 气功状态下生理反应的动态特征

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以 96 名具有 2~3 年功龄的气功学院的学生为气功受试者,以 15 名一般青年为对照者,测量了他们气功状态前和气功状态下,印堂、膻中、气海和右劳宫等 4 个穴位的皮肤电阻和皮肤微振信号。气功前为一般安静状态,10 分钟。尔后进入气功状态,首先意念集中气海,10 分钟之后即意念集中于右手劳宫,3 分钟。

把皮肤电阻气功状态相对于安静或前一种状态的相对变化(%1 分)与对照组比较发现,三年功龄气功组意念集中的主穴皮肤电阻下降,为兴奋,而非集中的余穴皮肤电阻则上升或变化很小,即相对抑制。而主穴与余穴的差与对照组均有明显差别。表明气功状态下整体的兴奋程度提高。通过二年功龄组不同功法的实验结果,可以看出,气功过程整体兴奋性的提高可以通过几种途径达到:主穴兴奋、余穴抑制;主穴兴奋、余穴也兴奋,但主穴兴奋值高得多;余穴抑制,主穴也抑制,但余穴抑制值高得多,主穴对余穴仍相对兴奋。总之,在意念作用下,整体的生理反应是在动态过程中建立起主穴部位对余穴部位的相对优势,可称动态优势律。

皮肤微振是一种低频的肌肉振颤,可以很具体地和脉搏波相区别。在频谱分析图上,微振波在 3 赫兹以后可见明显的主峰。实验结果表明,气功组的微振发生率可达 $49.0 \pm 6.4(\%)$,而对照组则在 $16.7 \pm 28.3(\%)$ 的水平,二者有非常明显的统计学差别。同时还看到,意念集中的穴位微振的幅值升高或升高较多,而余穴微振幅值下降或变化很小。说明主穴部位也保持相对的动态优势。

还在可以降低环境噪声 6db 的隔音室中同时测量劳宫微振和体外次声。在频谱图上可以很清楚地区别次声信号和环境干扰信号。发现 32 名学员中有 25 人有次声,占 78.1%,对照组 5 人中有 2 人可以产生次声。还看到次声与微振之间呈中度正相关,说明皮肤微振是体外次声的部分声源。同时,在气功状态下,次声幅度明显增强,也是一种动态优势特征。

1-3 建立在现代物理化学基础上联系 非生物与生物世界的健康模型

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我们提出的研究生命现象的模型是建立在现代物理化学模型的基础上, 综合了生物物理的诸多重要内容, 并将中国数千年来传统的医学观念联系起来——将人视为一个整体。

对于一个物理系统的过分压制导致其对称的裂解, 促使其演变至初始平衡状态。即一致的最终吸引子, 最大熵状态, 这种吸引迫使系统自发地趋向混沌规律或恒定规律。

生命, 以其结构的非对称性和机能的高度有序, 存在于有序和混沌的分界线上。

生命体是以化学系统的形式出现的, 它是一个由程序控制的高度复杂和自我控制的系统。控制生命的程序为时空中的吸引子即能量交换和化学转化的动态规律轨道, 通过反馈干涉和个体经历与环境相互影响的修饰作用, 保持并建立了生命体自身的序列和适当的动态稳定性。由持续的流动即信息粒子的不断交换保持了生命体自身结构的序列和机能节律的活力。正是靠着这种“结合力”才能维持生物体内部的生命动力。

人体器官中的单个细胞的协同工作是通过通讯机制相偶联和距离相互联系介导的偶联结构进行的: 动力网、模式、功能形式和结构形态均遵循干涉模态。

人体的器官是在所有这些网络与模式以干涉关系相互作用的特定交叉点上有机的统一, 这些交叉点是介入动力流和动力网(诊断和治疗)的关键所在。

综合系统的稳定性不仅取决于物质成分整体流动的稳定性 and 连续性, 还依赖于生物体内不同部位信息粒子的互相联系。

人体中三个方面的和谐统一与创造性的合作共同维持人体肉体、精神和心理健康。综合代谢流系统、精神流系统和心理灵魂流系统, 改变或阻断这三方面之一的代谢流, 就会引起其它两方面以及全身的相应变化: 这就是疾病。

对生命结构的动态假说加以扩展, 在场的量子相对论的基础上提出了气场和意识场的统一。物质体之间的相互作用力是由“结合力”介导的信息粒子, 在气场中我们称为“气粒子”。

在物质世界中, 人类的生存和意识体验都是由“气粒子”介导的, 从这种意义上说, 只有人类才能创造性地改善或破坏自然关系流。

多年来我们对于介入诊断和治疗的总体规划进行了研究,并预见了对病人在所有层次上进行干预的方法和策略。

偶联是通讯机制的基础,只有发射者和接收者在结构和节律上产生共振,信息的能量传递才能发生。我们探求最为精确的特异性偶联:医生对患者的爱;气功使调控能量的“气粒子”流由不和谐恢复平衡;物理方法通过准确的几何结构,以适当的形式,和谐的频率来确保物理流的调节活动,达到控制生物组织平衡的目的。

1—4 气功疗法机理的现代科学研究

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作为治疗疾病、预防和养生的,在全世界广泛普及的气功是中国传统医学(TCM)的组成部分之一,和针灸、中药(治疗方法)具有相通的基础理论和治疗机理。“气是什么?”、“气功是什么?”,可以说直接涉及到对人体生命本质的探求。因此,把气功作为广义的“气的医学”用现代科学的研究方法,阐明包括气功在内的中国传统医学的治疗机理。

研究对象:健康成人志愿者、各种疾病患者 200 名。气功治疗机理的科研方法:①文献科学,②神经科学,③核医学,④电子计算机图像解析工程学,⑤计量医学,运用以上方法进行综合分析、研究。

结果如下:(1)以《黄帝内经》为中心的文献学研究结果,气功、针灸的根本原则是“治神”。所谓“治神”提示了作为和心身相关的自然治疗力(内气)核心的大脑机能,由于针灸、气功的调整作用,在治疗上起到了重要作用,这是解析中国传统医学的关键概念。(2)为了“治神”的现代科学研究,用脑电图等电位分析法、放射性正电子断层摄影法就气功、针刺刺激对大脑机能的影响进行了分析。由于气功、针灸刺激,脑电等电位图的变化涉及到全部大脑皮质,特别是从大脑前叶到顶叶最为明显;放射性正电子断层摄影结果显示针刺刺激之后、从大脑旧皮质到新皮质被一过性激活,影响到包括多巴胺运动性神经在内的广泛领域的大脑神经细胞。(3)“治神”是同多种复杂的因子相关的多元性现象的概括,为了研究这一问题,建立了同“机体控制疼痛系统”相通的“治神”理论模型,此模型不仅可以解析包括气功在内的中国传统医学的治疗原理,也适用于说明具体的疾病治愈和宗教治愈(疾病)的机理研究。

1—5 在练功一年过程中脑电相干函数的变化

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本文运用了脑电相干函数分析方法,对 17—20 岁,学练“站桩功”的青年大学生进行了为

期一年入静时的脑电图(EEG)定期观察,探讨练功时间长短对脑电相干函数的影响。

本实验设练功组 32 人,对照组 35 人。在实验期间练功组每天定时练“站桩功”40 分钟。每半年对练功组学生进行一次入静时的 EEG 测试。对照组学生在实验期间一律不参加气功锻炼活动,对他们进行了两次相隔一年模拟入静状态下的 EEG 测试。测试时对受试者记录的八导脑电信号通过计算机进行 20 分钟连续实时处理,程序为“浙江大学电机系生物控制研究室”提供的“气功功能态计算机测试软件系统”。

实验结果为练功一年后,入静时左右额的总相干函数值由学功前的 0.84 ± 0.07 上升至 0.87 ± 0.06 , p 值小于 0.05。学功前的左右枕总相干函数值为 0.68 ± 0.14 ;练功半年后为 0.79 ± 0.10 ;一年后为 0.76 ± 0.10 。与自身对照相比 p 值均小于 0.001。学功前的左、右颞总相干函数值为 0.48 ± 0.17 ,练功半年后为 0.55 ± 0.13 ,与学功前相比 $p < 0.05$;练功一年后为 0.64 ± 0.12 。与学功前及练功半年相比 p 值均小于 0.001。练功一年对左、右中央区及前后相邻脑区(F3-C3、F4-C4、C3-O1、C4-O2)的总相干函数无显著性影响。练功组学功前的测试结果与对照组的同期第一次测试结果相比,无统计学显著差异;对照组的两次测试结果表明:大脑各左右对应区及前后相邻区的总相干函数值均无明显变化。

结果说明气功训练对练功组入静时 EEG 两额、两枕、两颞相干函数均有影响,其中左右颞总相干函数值随练功时间的增加,升高最为显著,与练功时间似有一定的量效关系。提示左右颞总相干函数值是反映练功入静程度的比较客观的敏感指标。

【注】本课题为国家中医药管理局资助项目

1-6 对气功状态下气功师的生理现象及其它的测定

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测定气功师体内的生理现象以及工程学方面的变化情况对于阐明气功的原理是至关重要的。在本报告里,我们尽可能对如下的项目作了同时测定。并通过这些诸如:脑电图与地形图测定,IBVA(美国制脑电图测定仪)显示的立体脑电图、费纳普来斯(美国制心脏测定仪)显示的心率、血压,由鼻腔对呼吸的监控温度记录以及对练功中所发放的远红外线的强度测定等方法,从中检测出了可作为资料的信息。

在动功中,我们由红外线测定仪的测定结果发现,被测者的面部、手部的温度随内气的高涨而上升,这时可知被测者的心率要比安静状态时增加 26%,血压增加 40%,同时测定到的呼吸频率亦增加了 2.47 倍。尽管内气高涨的状态只维持了 90 秒钟。但我们却从被测者发放的远红外线中检测出 1Hz 左右的振动信息,而在此前、后的时间里都没能检测出。这种振动信息可用 2 毫米厚的铝板或 5 毫米厚的纸板加以遮蔽。另外,这时对脑电测定的结果表明:与左脑相比,右脑额叶的 α 波、 β 波增强,功能活跃。

在静功中,我们通过测定静功状态下被测者的心率、血压发现,与动功时一样,心率上升了 22%、血压上升了 25%。而且,红外线测定仪上亦可见到被测者面部体表温度的上升。但是用

IBVA 测定脑电的结果却发现, β 波近乎消失, 低 α 波只稍有增强。由脑电地形图测定的数据可知, 低 α 波的强度并不稳定, 它随时间的推移有强弱的变化。另外, 静功中右脑额叶中存在着两个电压源。

1-7 头低位卧床时练气功改善血液头胸方向转移的可能性研究

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本文对除气功因素外其它条件都是可比的 6 名练功者和 6 名对照者进行 7 天-6° HDBR 前、中、后一般反应、生理、生化和神经电图指标、以及立位耐力变化的研究, 结果表明:

1. 7 天-6° HDBR 确实起到了对短期航天微重力环境的模拟作用;
2. 和对照组相比, 练功组在修练卧床功意念下肢时, 能使 CBF、SV、CO₂ 明显降低, 同时使其 LLBF、Rcbf/RIIbf、Rsv/RIIbf、下丹田区和腓肠肌处皮肤温度、以及下肢腓肠肌处的经皮氧明显上升、尿中皮质醇、醛固酮和血中 SOD 均好于对照组、H 反射潜伏期和腓神经 MNCV 明显好于对照组、并且对 7 天-6° HDBR 的一般反应也明显轻于对照组。

3. 由此看出, 修练气功确实可以改善由 7 天-6° HDBR 造成的卧床者自身血液头胸向转移的程度, 进而使卧床者整体不同层次、多系统之生理、生化、神经电图和立位耐力及一般反应也得到明显地改善。

1-8 超导生物磁强计对气功态下磁信号的研究

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过去我们在磁屏蔽室内用磁通门磁强计对气功磁信号进行了动态研究, 发现在气功态下磁信号频率一般在 2Hz 以下, 振幅为几个 nT (T 为特斯拉、磁通量密度单位, $1\text{nT} = 10^{-9}\text{T}$) 到 10^5nT 。由于人体磁信号为弱磁信号, 为了更好地了解其动态特征, 本文用超导生物磁强计进行测量。超导生物磁强计的优点是频响范围宽, 从 DC—10KHz (磁通门磁强计为 DC—10Hz); 灵敏度高。数据通过磁带记录, 然后用计算机进行频功谱分析。

实验对象为 20 人 38 人次, 分为两组, 对照组 (未练过气功) 7 人次平均年龄为 46.3 岁, 练功组 (练功时间 1~20 年) 17 人 31 人次平均年龄为 48.3 岁。

实验程序为被试者在进入磁屏蔽室以前要除去随身携带的一切磁性物体, 然后进入磁屏蔽室内, 将所测穴位对准探头。实验开始后连续记录发功前, 发动中和收功后 (各 3 分钟) 磁信

号的动态变化。

磁信号用美国 BTI 公司的 M-601 型超导生物磁强计进行测量,并用日本 TEAC 公司 MR-30C 型七导磁带机进行记录。数据处理用日本三荣 7T17-S 型信号处理机作频功谱分析,文中所述及的功率变化均为相对值变化。

实验结果表明,发功时,从不同穴位(劳宫穴、印堂穴、百会穴)可测到三种磁信号: $<1\text{Hz}$, 3Hz 和 $<2\text{KHz}$ 的信号;并产生三种功率变化:增大、减小和无变化。不同穴位磁信号变化可得到很好重复。发功过程中发现磁信号减小及发生频谱变化是两种新现象。

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1-9 克尔连图像

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用克尔连摄影术研究气和气功发现手指周围的能量场在不断地变化,并受思维和情绪的影响。虽然这些发现很难用西方物理学的观点理解,但对中国气的概念确能做出解释。传统的中国医学认为,所有生命物体的周围都弥漫着能量流,并随着运动和思维而持续流动。

比较手指的克尔连图像与穴位诊断时发现:较小的克尔连图像可反映与循行至该手指的经脉有关的内脏虚弱。心理研究表明,压抑时克尔连图像小;精神分裂症的病人发作时图象扭曲模糊,好转时恢复正常。

经大量的观察发现青年比老人的克尔连图像亮,健康者比病人亮。气功师一般有很强的图象,但给病人治疗后减弱。为了进一步说明这一现象,做了以下实验:

以一组克尔连图像大的人做为“医生”,摩擦别人即“病人”的肩部 3-4 分钟后,“病人”的克尔连图像增大,而“医生”的缩小。常常在“医生”感觉有点疲劳时,“病人”的感觉愈好。这表明“医生”的气传给了“病人”。

许多气功医生为了避免自己生病每天治疗不超过三个病人,而且每天练功数小时以恢复元气。气功医师还能随意产生巨大的克尔连图像,但治疗病人后或讲课发放外气后,克尔连图像经常变得很小甚至完全消失。

1-10 气功调息对植物性神经功能的影响及其机制探讨

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气功锻炼早已被认为是非药物性抗衰老保健和治疗慢性病的有效方法,但其作用原理需进一步探讨。本文用现代电生理学方法,在 64 例练功者和 12 只兔进行研究,着重探讨气功调

息对练功者的呼吸、心率、手指血管容积以及小肠运动的影响,并通过动物模型进一步阐明其作用机理,为气功锻炼能强身健体、治病、延年益寿的作用提供科学依据。

一、气功锻炼对呼吸、指血管容积及肠鸣音的影响

在 64 例气功爱好者,分别在练功前、练功时及收功后同时测定他们的呼吸频率、指血管容积和肠鸣音的变化。练功前,呼吸频率为 17.1 ± 0.4 次/分钟(均数土标准误,下同)、指血管容积为 8.2 ± 0.8 mm、肠鸣音为 12.0 ± 1.1 次/分钟;练功时,呼吸频率为 10.6 ± 0.8 次/分钟、指血管容积为 9.7 ± 0.9 mm、肠鸣音为 16.3 ± 1.1 次/分钟,上述三个观察指标,在练功前和练功时的差异非常显著。

二、练功时不同呼吸方式对指血管容积和肠鸣音的影响 当练功者吸气长于呼气时,指血管容积脉搏波幅值减少,肠鸣音减弱;当练功者呼气长于吸气时,指血管容积增大,肠鸣音增强。两者均有非常显著性差异。

三、练功时呼吸停顿对肠鸣音的影响 吸气末马上闭气 20 秒钟,肠鸣音明显增多;呼气末马上闭气 20 秒钟,肠鸣音明显减弱,说明吸气末或呼气末呼吸停顿对肠鸣音的作用相反。

四、肺扩张或肺萎缩对血压、心率和小肠运动的影响 为了进一步探讨呼吸过程对指血管容积及肠鸣音的作用机理,本文在 12 只兔作进一步的研究。(一)肺扩张对血压、心率和小肠运动的影响 在兔吸气末向其气管快速注入 10ml 的空气以使肺扩张增强时,表现为血压下降、心率变慢、小肠运动增强;静脉注射阿托品后,重复扩张肺时,血压下降幅值变小,心率和小肠运动不再发生改变。(二)肺萎缩对血压、心率和小肠运动的影响 在兔呼气末从其气管快速抽出 10ml 的空气以使肺进一步萎缩时,血压升高、心率减慢、小肠运动减弱;静脉注射阿托品后,重复上述实验时,除血压仍明显升高外,心率和小肠运动的改变不明显,提示肺萎缩引起的心率和小肠运动改变是通过 M 受体介导。

综上所述,练功时可对植物性神经功能产生明显影响;不同的调息方式作用不同,可能与 M 受体的兴奋有关。

1—11 气功锻炼对急进高原群体心功能障碍预防作用的机理研究

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平原人快速进入西藏高原后引起的心脏功能变化是一个多因素的复杂过程。我们对 32 名男性平原青年在进入高原前进行 4 周启元气功的锻炼,同时设立广播体操组(34 名)进行对照观察。发现练功组急性高山反应的发病率及症状加权积分值均低于对照组,且血压异常发生率、心率及氧耗指数均低于对照组。进入高原后的心功能检测值均较平原检测值降低,发现 SI、CI、AC、HI 等指标练功组均高于对照组,TPR 练功组明显低于对照组。上述各项指标经统计学处理有显著性差异($p < 0.05 \sim 0.01$)。提示气功锻炼对急进高原所致心功能障碍有较好的预防作用,应进一步深入研究。

1—12 气功对高原移场飞行员微循环障碍预防作用的研究

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平原人快速进入西藏高原缺氧环境可出现明显的微循环障碍,我们对某部 22 名飞行员在转场高原前进行 8 周启元气功的锻炼,同时设立对照组 18 名飞行员,按常规体育训练 8 周进入高原。我们在进藏前后进行了症状学,舌尖甲襞微循环,劳宫穴温度等指标检测。2 组进入西藏高原后的舌尖、甲襞微循环检查异常发生率均较平原检测值明显升高,练功组异常发生率明显低于对照组,经统计学处理 $p < 0.01$ 。症状学检查发现,对照组在初进高原的第 1—7 天急性高山反应的发病率明显高于练功组,进入高原后的第 1、3、7 天的症状积分值经统计学处理分别为 $p < 0.01$ 、 $p < 0.01$ 、 $p < 0.05$ 。从结果可看出 2 组血压的异常发生率均增加,但练功组的异常发生率明显低于对照组,经统计学处理 $p < 0.01$ 。另外,进入高原后练功组劳宫穴温度比较稳定,而对照组则明显降低,经统计学处理 $p < 0.05$ 。从以上结果可以看出气功组飞行员高山反应的积分值及微循环异常发生率均明显低于对照组,说明气功锻炼确实可以减少急性高山反应的发病率,预防微循环障碍的发生。并且可以加速机体对高原缺氧的适应能力及缩短习服时间。同时表明,气功锻炼对急性高山反应的防治具有主动积极的临床意义,它是预防急性高山反应的一种经济方便易于在部队推广的较好的训练方法,值得进一步研究。

1—13 元极功对大学生身心健康和运动能力影响的研究

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气功是中华民族的宝贵文化遗产,在防病治病,增进健康方面,有着独到的作用。日前,元极气功与现代科学结合,已经取得了丰硕的成果。练元极功对人体生理、心理的影响已有报导。但是,练功对人体生理、心理及运动能力的综合影响,及其整体效应目前尚未见报导。为了研究元极功对人体身心健康的作用,我们于 1991 年 11 月至 1992 年 4 月在同济医科大学 90 级医疗系学生中进行了这方面的初步探讨,分析了实验组与对照组在练功前后生理、心理及运动能力的变化情况。结果表明:

1. 练功前实验组学生在 800 米长跑极限运动后 20 分钟、40 分钟测定的血乳酸清除率分别为 20.1% 和 57.6%,练功后的清除率分别为 36.6%,66.8%,血乳酸清除率在练功前后的差别有显著意义($p < 0.05$)。表明练元极功、听元极音乐可以消除疲劳,提高大学生极限运动后的血乳酸清除率,加快体力恢复。

2. 练功前实验组学生台阶指数为 45.2,练功后为 64.2,练功后台阶指数提高 19.0,其差

别有极显著意义($p < 0.001$)。说明练元极功可以改善心肌供血,提高心脏储备能力,从而增强体质,提高运动能力。

3. 练功前实验组学生强迫症、人际关系敏感、忧郁、焦虑、敌对等得分分别为 1.24、1.1、0.90、0.75、0.83。练功后得分分别为 0.98、0.85、0.68、0.55、0.64。表明练元极功可改善学生的心理状态、帮助他们克服心理和情绪障碍。

1-14 气功意念对调息作用的影响

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气功典籍中把意念的运用比作“火”,把调息呼吸喻作风,二者相互结合而成的“文武风火”有着不同的功能“妙用”。用意念控呼吸时称为武火烹练;而当凝神穴,呼吸任凭自然时则称文火沐浴,它们在一些重要的练功阶段中起着关键的作用。

心脏搏动具有自动节律也受控于植物性神经,因而急缓不定的心率变化包含着丰富的生理信息。倘对即时心率(或 R 间期)作频谱分析,则可从功率谱图上清楚看到有关生理功能之间的关系:0.3Hz 左右的谱峰是呼吸节律在心率变异上的反映,被视为呼吸性窦性心率不齐的定量标志;0.1Hz 左右的谱峰称 Mayer 波,起因与心血管系统的自主振荡。已有的研究结果表明,血管与呼吸两谱峰分别受控于交感和迷走神经,因而高低两频段能量之比可作为人体植物神经功能平衡情况的无创伤性检测指标。另外,各谱峰之间在一定条件下可以互相影响,存在着物理学上所称的“频率吸引”现象。

我们运用心率变异频谱分析方法,在 60 名志愿受试者身上观察了气功意念与调息之间的相互关系,结果表明:意识状态下的主动调息过程,当其调息频率降低接近心血管系统固有振荡频率时,调息峰幅明显增大,高低频段能量比值下降,表示迷走活动增强。而当调息频率增高时,则调息峰幅下降,两频段比值增高,显示交感活动亢进。表明用意念主动改变调息的频率,可变更高低频段的能量对比,进而影响植物神经功能的平衡方向。而无意识状态下的被动调息过程,则是增大心血管系统的固有振荡,调息频率减低,峰幅下降;随着入静程度的加深,最终可将调息谱峰完全吸引到心血管系统的固有振荡上来,在 0.1Hz 左右两峰完全重合形成一个单一高耸的混合谱峰。显示迷走与交感活动处于“阴平阳秘”的特殊平衡状态。

观察结果表明,气功典籍中借用比喻方法对意念与调息关系的描述是能够用实验生理学方法进行验证的。

1—15 气功对消化道功能影响的实验研究

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本文以离体肠段、B超直视下胆囊变化和肠道菌群的分析,分别研究了气功对机械消化、化学消化和肠道微生态的影响。

一、气功对离体肠段的作用:气功师向恒温、给氧、用台氏液扶育的离体肠段发气10分钟后,其收缩幅度显著增加,停止发功15分钟后,收缩幅度还持续升高,对收缩频率影响不大。

二、B超直视下入静前后的胆囊变化:用岛津SOV超声显像仪测试了12名练功者入静前、中、后的胆囊横径和壁的厚度,结果发现入静5分钟后,胆囊横径增加,厚度减小,提示胆汁分泌增多。

三、气功对肠道菌群的影响:我们测试了7名长期练功者的粪便,发现其中肠杆菌、肠球菌等致病菌低于非练功组,而乳杆菌、双歧杆菌等对人体有益的厌氧菌则高于非练功组。另外,体外试验也证明,气功外气对致病菌有“杀菌”作用。而回春生(双歧杆菌)对离体肠段有促进其收缩的作用。

四、综合分析:气功促进机械消化、化学消化和肠道微生态的平衡。可能由于①从生理学角度看,气功通过植物神经整合作用,提高了副交感神经的兴奋性,使肠蠕动增强,胆汁等腺体分泌增多。②从系统论的观点看,两端开口的消化道是典型的开放性的生态系统,气功可以增加包括消化道在内的人体巨系统的有序化过程。③从微生物生态学的概念看,气功能扶植消化道优势菌群的生长,抑制致病菌的作用。

1—16 气功调节人体循环系统作用的研究

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气功是激发人体潜能的一种有效方法,这种方法具有重要的疾病防治作用。为探讨气功调节血液循环的生理效应和防治心脑血管疾病的作用机制,我们采用心功能运动负荷试验观察练功30天前后的PWC170值,以及测试脑血流图、肢体容积脉波图的变化。受试者100名,分两组,气功组80名,对照组20名。现将研究结果分述如下:

1. 心功能运动负荷试验:采用BCM—Ⅲ型心功量机测试气功组练功30天前后的PWC170值,对照组测试矿泉水浴30天前后的PWC170值。试验中给受试者施两次不同的负荷量,每次持续3分钟,中间休息3分钟,两次均在第二分半钟起测半分钟心率,然后计算PWC170值和 $VO_2\max$ 。结果表明,气功组练功后完成的功率比功前平均增高48.8%,对照组增加

7.5%，与气功组比较差异非常明显($p < 0.05$)。气功组练功后 VO_{2max} 比功前平均增加 29.9%，对照组增加 4.4%，两组间差异显著($p < 0.05$)。提示气功是一种提高心肺功能水平的有效方法。

2. 脑血流图：练功 30 天后左侧波幅比练功前平均增高 80.4% ($p < 0.01$)，右侧增高 37.8% ($p < 0.01$)；左侧阻力指数比练功前降低 6.3 倍 ($p < 0.01$)，右侧降低 8.1% ($p < 0.05$)；左侧上升时间比练功前降低 21.2% ($p < 0.01$)，但右侧有所升高。表明气功具有增加脑血容量和降低脑血管阻力的效应。

3. 肢体容积脉波图：练功 30 天后双侧波幅值明显高于练功前 ($p < 0.01$)；双侧阻力指数均有降低 ($p < 0.05$)；左侧流入容积速度比功前增加 16.7% ($p < 0.01$)，右侧增加 17.8% ($p < 0.05$)。说明练功后下肢血容量增加，血管阻力降低。

综上所述，气功调节血液循环的作用非常明显，这对防治心脑血管疾病及下肢血管疾病有十分重要的意义。气功是一种具有调心、调息、调身作用的运动方式，所以是很多慢性疾病的康复方法。本项研究结果为防治血液循环系统疾病提供了初步的实验依据。

1—17 气功对心脏功能的影响

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为了观察气功对心功能的影响，本实验的受试者为 37 名中年知识分子(35 岁—45 岁)，其中男 25 人，女 12 人。前三个月，受试者除自己每天上、下午各练一小时左右的先天自然功外，每周还接受气功师两次外气治疗；后九个月完全为自己每日练功两次，不再接受气功师的外气。在练功开始前，接受外气三个月后及一年后，分别使用 RM-6000 多导生理记录仪，同步记录心电图(ECG)、心音图(PCG)、颈动脉搏动图(CAR)测算左心收缩时间间期(STI)。练功者在接受外气三个月后，心率(HR)、电机械收缩时间($Q-S_2$)、射血前期(PEP)、左室射血时间(LVET)、射血前期/左室射血时时间(PEP/LVET)、等容收缩时间(IVCT)、收缩压(SP)、舒张压(DP)、与接受外气前对比，经统计学处理，均无显著差异；而在自己继续练功九个月后(即练功一年后)的检查结果与练功前对比发现：除 HR、IVCT、 $Q-S_2$ 没有显著变化外，其它项目的数据，经统计学处理均有显著差异，结果请见附表，表明练功提高了心脏的功能。

	HR	$Q-S_2$	PEP	LVET	PEP/LVET	IVCT	SP	DP
练功前	69.2±5	395.9±10	95.3±5	301±5	0.32±0.009	39.4±10	156±6	87±5
接受外气 三个月	69.1±6	395±11	94.6±8	305±4	0.31±0.01	39.6±11	157±5	88±6
练功一年	67±5	398±8	82.9±10**	315±11*0.27±0.009***	38.5±12	126±8**	70±10***	

注：1. 表用数字均为：均数±标准差。

2. * * 代表 $P < 0.01$, * * * 代表 $P < 0.001$ 。

3. SP、DP、HR、PEP/LVET 治疗前后比较用 t 检验。

其余各项参数比较均采用协方差分析法。

1—18 模拟气功状态下阶跃式呼吸模式对心血管功能的影响

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呼吸活动对心血管功能有一定的影响早已有定论, 中国医学科学院生物医学工程所推出了一种利用自身心电反馈挖掘的呼吸训练模式, 通过这种特殊的呼吸训练, 意在使受试者的胸内压先形成一次次吸气相的阶跃, 并针对性地在心脏收缩的起始期(习电 R 波后某期), 主动增加胸主动脉的跨壁压, 从而降低心脏血的阻力; 而一次次呼气相的胸内压阶跃, 又锁时相地落在心脏舒张的起始期(心电 T 波后某期), 主动减少胸主动脉的跨壁压, 增加动脉舒张压, 提高冠脉供血的灌注压。由于吸气相的胸内压的负向阶跃对心脏及主动脉的影响作用类似主动脉气囊反搏(IABP)在心脏收缩时的气囊排气作用, 而呼气相的胸内压正向阶跃对心血管的影响作用类似 IABP 的充气扩张作用, 故自主控制下的这种阶跃式呼吸有自身反搏作用。由于其特殊的程序设计, 可有效地增大胸泵向心泵压力传递中对心血管活动的有益作用。本项研究对两组受试者(健康青年组 30 例, 慢性心脏病组 14 例)训练前后的心血管功能进行了对照观察, 由彩色多普勒超声诊断仪得出的数据结果表明: 这种自主控制的阶跃式呼吸训练可明显减慢受试者的心率, 减轻心脏后负荷, 增加动脉舒张压进而增大冠状动脉入口处压力, 增加每搏输出量并减少心脏做功。对改善左心室舒张功能, 提高左心室的顺应性以及改善右心工作条件均有一定作用。同时可使心脏功能障碍者胸闷、胸痛、气短等主观症状大大减轻。由于此法的无创性, 非药性和设备简单等优点, 无疑为心脏的康复和治疗提供了一种全新的手段。

1—19 太极拳对经络波的作用

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太极拳属于一种内功(气功)拳术, 经络学说是气功的基础理论之一。本文用脑电图仪和微小振动换能器测试了 30 名太极拳练习者和 31 名不练拳者的脑电图、经络波和心电图(三者同步测试)。结果表明: 太极拳组“心脏—经络的耦合程度、百会穴 H/L 值均显著性地高于对照组

($p < 0.005$, $p < 0.002$), 太极拳组在松静状态时经络波频率较对照组慢($p < 0.05$)。

本文认为:太极拳对经络波的上述作用,使经络通畅,气血更有序地运行,这是太极拳具有健身祛病作用的主要原因之一。另外太极拳所追求的境界“合一”可能就是人体各系统高度的和谐和耦合。

1-20 有关气功功力检测情况研究之二 练功者体表穴位特征能量检测的应用研究

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用人体能量代谢测试仪, 随机检测 91 例练功者观察其局部浅表体热微变情况。结果表明: 练功前后机体体表穴位特征能量的改变、与脏腑病变及经络穴位有着特定的内外相应的反应规律, 从而证实新大郗穴位特征能量的改变具有相对的特异性, 并首次发现检测练功前后机体左右新大郗穴位特征能量的失衡, 可作为中国医学气功在诊断肿瘤的定性方法。

1-21 气功态的红外现象与血管容积关系的探讨

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为了进一步探讨气功的本质, 了解气功过程中一些生理变化的发生机理, 本实验研究观察了气功过程中红外现象与血管容积两者的变化及其相互关系; 实验结果发现, 受试者入功后血管容积、红外测试的温度和红外热像均较入功前明显增加($p < 0.01$), 且血管容积变化与红外热像、红外测温变化呈伴随效应, 后者多落后于前者; 该实验结果提示, 气功过程中局部血管容积的变化是引起红外辐射变化的主要原因之一。

1-22 应用表面肌电图来检测次声气功仪对肌肉电活动的影响 一个双盲, 安慰剂对照的研究

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气功医师发出的外气是非常令人着迷的现象, 对这个问题的研究有助于揭示气的本质, 为现代医学做出贡献。由于要有气功师参加使得在临床上难以科学地进行研究。在今天的实验里, 我们用了—个模拟产生外气的电声学装置(次声气功仪), 因为它比气功医师容易控制, 多年来表面肌电图检测已证明是诊断慢性疼痛综合症, 判断损伤范围以及康复过程的有用工具。

共有 57 名受试者参加了实验,受试人员先填表格,然后进入测试室。标记右肩的治疗点,用酒精擦拭周围皮肤,记录表面肌电图做为处理前对照。然后进入另一房间接受 10 分钟的次声气功仪或无作用的仪器的处理,只有该室的操作人员知道病人接受哪个仪器的治疗,但她不知道哪个是气功仪,事实上她都不了解我们在做什么实验。最后病人回去再测量一次表面肌电图。

结果:3 人未完成实验,气功仪组 27 人,对照组 27 人。实验组经气功仪治疗后表面肌电值由 16.3 ± 3.1 微伏下降为 13.3 ± 2.4 微伏,减小了 18.4%;而对照组经无用仪器处理后由 16.6 ± 3.2 微伏上升为 17.2 ± 2.6 微伏,增加了 3.6%,两组间相差 22%。以上观察的表面肌电图检测的结果,提示气功仪的作用是降低肌肉的电活动。

1-23 发音医学气功的科学研究

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我们在研究中发现一些道家气功的练功者,在练功时可以发出一种频率单一而且非常稳定的声音。为了弄清这种发音振动是否与组织器官发生共振,我们做了下面的实验。

用 AGA 热像扫描仪对 20 名健康受试者做热像分析。他们都受过正规的发音训练,并且意守人体的某一部位。观察在摄氏 19 度恒温的密闭房间内进行,将身体暴露 20 分钟后,开始实验。我们观察了腹部的热像:所有的受试者的肚脐温度达稳定后;练功者的脐下温度与对照组明显不同,在穴位点关元、石门、气海的相应部位的温度低于周围区域。然后我们开始练习想象中的某种音调的发声,几分钟后脐下的热辐射增强,并有热的感觉,然后在旁中线开始出现热点。这些热点随时间逐渐增强,融合扩散。这一现象的神经生理学基础可能是通过刺激感受器兴奋了意守部位附近的神经末梢。一旦引发了共振机制,这一区域发生振动并由机械脉冲转变为动作电位,动作电位可由自主神经系统或其它尚不清楚的方式传播。

1-24 胃声刺激和足三里的 E. A. V. 测量

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发声是古老的中国医学的一部分并且是道家的秘密之一。我们希望通过实验证明人类的发声可以引起器官的电反应,以建立正常人的针灸穴位和经络的气运行模式。

用数字录音技术记录了气功发声教师李晓明的 1 秒钟发声,并通过复杂的计算机的声音处理技术得到 10 分钟的连续声音。

我们给闭眼躺在安静房间内的 10 名志愿者听了几分钟胃声。左腿足三里的皮肤电位测量是通过美国加州制造的 Orthogen 200 的智能化的仪器进行的。这个仪器是在德国医生 Voll 1957 年提出的技术的基础上加上复杂的计算机技术制造的。虽然在中国也做了许多测量病人皮肤电位的研究,但是这个仪器能非常准确地测量与远处器官相联系的针灸穴位的能量,这意味着通过理化反应的时域测量反映器官的血流供应。

初步的数据提示:被动地听回放的数字录音后,受试者胃的能量模式发生了显著改变,而更为显著的模式改变发生在传统气功练习者,气功教师李晓明的部分学生直接发声时。

最后的工作将有待更多的例数和统计学处理。

1-25 傅尔电针仪上测量到的气功治疗平衡的效应

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傅尔电针仪(EAV)可用来检验练气功在治疗平衡方面的效应。傅尔电针仪的测试方法是:在一钝的金属探针上通以弱电流,将探头放在测试者某一经络穴位上,以测试其皮肤的电导。根据所测到的最大电导及其相关的时值,来判断其结果。电导是用一个刻有从零到一百刻度的电表来记录的。如果在测试穴位测得的电表读数是 50,则表明该经络穴位所沟通的内脏没有病变。如果测到的电导读数高于 50,则表明该经络穴位所沟通的内脏有炎症。如果所测得的读数低于 50,该表示该内脏功能衰退。“指示偏坠值”(也即电表读数的下降值)是表明某一内脏器官有功能性病变的一个很重要的标志。“指示偏坠值”发生在当某经络穴位的电导从一个很明显的最大值(或起始值)下降,再部分回升,稳定下来。

为了要确定傅尔电针仪能否用来检验气功效应,我们测量了十一名练气功者在练气功前后的不同电导。在五分钟内,我们在每个练气功者的手指和足趾经络线末端的 24 个针灸穴位上作了测量。傅尔电针仪所使用的参数如下:输出电压是 1.25 伏特直流电。最大电流输出是 12.7 微安培,在刻度 50 处的电阻是 95,000 欧姆。我们先在测试者针灸穴位周围的皮肤上涂一点自来水,再将一个直径为 1/8 英寸的黄铜探头轻轻地贴在受试者的皮肤上,并要求受试者用自己的手握住电针仪的另一个电极。这样,人体各内脏,包括身体左右两侧,共 20 处的生理功能,就都可以在计算机的荧光屏上——显示出来了。

我们以同一仪器设备,同样的工作人员,在相隔 6 个月的时间内,前后共做了两轮测试。在这两轮测试中,我们都要求受测试者自选气功静功或动功。三名有经验的气功师和一名不会气功的志愿者参加了第一轮测试活动。三名受测试者在练气功前后各进行了一次测试。另外一名不会气功的测试者的第二次测试,是在接受了另一名气功师发放的外气后进行的。

这四名受测试者的平均电表读数由 70.8 ± 4.8 降低到 52.7 ± 2.4 ,平均下降值为 $-25.5 \pm 4.9\%$ 。 $p=0.004$,统计学检验达到了非常显著的水平。我们还比较了锻炼气功前后测试过程中的“指示偏坠值”。练气功后的偏坠值都比练气功前的偏坠值要小。其中三名气功师的“指

示偏坠值”，分别由 20, 22 和 53 下降到 0, 而第四名不会气功的测试者, 在接受气功外气后的测试结果, 其“指示偏坠值”由原先的 129 下降到 28。

七名志愿者参加了 6 个月后进行第二轮测试。每人都在傅尔电针仪上测试了三次。第一次是在练气功前测试的。第二次可以在练气功前也可以在练气功后测试, 并要求受试者不要事先告诉主持测试的人, 他们有没有刚练过气功。这种“遮盲法”, 可以保证主持测试的人不知道该受试者有没有受练气功的影响。测试结果, 练气功后使四人的电表读数由 72.3 ± 7.6 下降到 53.0 ± 9.8 ($-27.3 \pm 7.6\%$), 但也使另外三名受测试者的读数由 66.5 ± 12.7 增加到 73.1 ± 10.4 ($10.3 \pm 5.7\%$)。另外, 受测试者在练气功前的测试中都有“指示偏坠值”, 但在练气功后, 他们的“指示偏坠值”都降低了, 有的消失了, 或相当于 0。

上述测试结果表明: 傅尔电针仪是能够反应出练气功后人体内脏所发生的变化。因此, 傅尔电针仪可以用来提供有关气功是怎样平衡人体能量和怎样影响某条经络或某一内脏器官等方面的基本情况的。

1—26 气功: 在生物力学之前通过呼吸平衡生物电

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本实验研究了 4 名受试者练习一种呼吸气功时身体生物电水平发生的改变。所有受试者在练习冥想前后分别测量一次以观察其变化, 为了方便和客观性我们使用了电经络图像仪, 测量每人的源穴。为了标准化我们选取了源穴和/或手腕的穴位, 比较练功前练功后的结果发现, 在平衡生物电水平方面每个人都有改善。

1—27 气功对性格的影响

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性格与健康关系密切, 研究表明 A 型行为类型者易患冠心病, 神经质者易患多种心身疾病。因此, 气功如能改变性格中的不良倾向, 无疑对防治疾病会有一定作用。我们对坚持练气功二年以上 60 岁以上的老年人 122 名及从未练过气功的 60 岁以上老年人 90 名用艾森克人格问卷 (EPQ) 及 A 型行为类型问卷进行了调查, 结果发现神经质分 (N 分) 气功组非常显著地低于对照组, 内外倾分 (E 分) 和精神质分 (P 分) 两组间无明显差别。气功组 A 型行为类型者占 39.3%, 对照组占 51.1%, 高于气功组。

我们又对坚持练气功二年以上的大学生 50 名及从未练过气功的大学生 97 名也进行了上述性格调查, 结果与老年人类似。气功组 N 分非常显著地低于对照组, E 分和 P 分两组间差异不显著。A 型行为类型者气功组占 28%, 对照组占 49.4%, 也是对照组高于气功组。EPQ 中 N 分代表神经质, 分数高表明焦虑、担忧、常常郁郁不乐、忧心忡忡、情绪反应较强烈等。上述结果

表明练气功对改变神经质有作用,对改变 A 型行为类型也可能有一定作用,但上述均为横向研究,虽然调查人数较多,能在一定程度上说明练气功在改变性格中不良倾向方面有一定作用,尚不能完全除外练气功者的自我选择作用。即这一类性格的人容易坚持练气功,而造成了上述结果。为此我们又进行了纵向研究。在刚开始练气功时用上述问卷调查每个练功者,在二年后再次调查,并调查二年中练功情况。共获完整资料 158 份。其中二年中能坚持练功者 33 名,仅学了气功而未坚持练者 83 人,练了数月未再坚持者 42 人。坚持练功组 N 分由 13.4 ± 5.1 下降到 11.1 ± 4.9 , $p < 0.02$ 。E 分和 P 分两次调查间无明显差别。未坚持练功组(83 人)两次调查 N 分分别为 13.2 ± 4.7 和 14.2 ± 5.2 ,无明显差别。坚持练功组 A 型行为类型中 TH 分第二次比第一次有明显下降,CH 分稍有下降,但未达显著水平。未坚持练功组前后两次调查的 TH 分和 CH 分均无明显改变。上述结果表明练气功确对改变性格中不良倾向有积极作用。

1—28 气功对心理健康作用的研究

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气功练功实践与气功临床实践表明,气功不仅对身体健康有作用,而且可能对心理健康有作用。

本研究采用心理学实验方法对气功对心理健康作用进行了探讨。

本研究包括三个方面的实证研究。

一、90 问题临床检查表(SCL-90)对气功促进心理健康的研究

1. 气功对心理健康的作用

27 位练功者。在他们学气功开始前,用 90 问题临床检查表对每个被试进行测定。当他们练了 4 个月的气功,再用 90 问题临床检查表对每个被试进行测定。

研究结果表明:练功对上述 13 个项目都有良好的改变,其中总均分、阳性项目数、躯体化、强迫症状、人际关系敏感、焦虑、敌对、恐怖、偏执、精神病性和其它差异达到了显著性水平。

2. 练功历史长短与气功的心理健康效应的关系

我用 90 问题临床检查作为心理健康的评价。对 272 名练气功的人的心理健康进行评价。272 人分为两组,一组是练功两年以上的 153 人,另一组是练功两年以下的 119 人。对 272 名练功者的研究结果如表。

这个结果表明,除躯体化和偏执练功两年以上组与练功两年以下组的统计学考验不显著外,练功两年以上组的总均分、阳性项目数、阳性症状均分、强迫症状、人际关系敏感、抑郁、焦虑、敌对、恐怖、精神病性和其它均比练功两年以下组低,并且统计学考验差异显著。

根据以上两个研究结果与其它这方面的研究结果我认为:气功是促进心理健康的重要手段。

表 练功时间与心理健康的关系

项 目	M±SD 练功两年以下组	M±SD 练功两年以上组	t	p
总均分	1.568±0.447	1.437±0.361	2.91	<0.01
阳性项目数	31.88±18.59	26.96±16.686	2.28	<0.05
阳性症状均分	2.56±0.618	2.39±0.56	2.39	<0.05
躯体化	1.567±0.661	1.45±0.49	1.65	>0.05
强迫症状	1.882±0.578	1.72±0.59	2.28	<0.05
人际关系敏感	1.719±0.607	1.56±0.49	2.52	<0.05
抑 郁	1.607±0.570	1.48±0.43	2.73	<0.01
焦 虑	1.490±0.555	1.34±0.45	2.38	<0.01
敌 对	1.578±0.517	1.46±0.47	1.87	=0.05
恐 怖	1.329±0.450	1.22±0.43	1.98	<0.05
偏 执	1.482±0.514	1.40±0.47	1.30	>0.05
精神病性	1.471±0.443	1.31±0.36	3.58	<0.01
其 它	1.620±0.577	1.45±0.55	2.39	<0.05

二、气功对行为类型的作用

我用行为类型问卷对气功组和对照组进行研究,气功组是 89 人,对照组是 144 人。我的研究表明:

1. 气功组的 A 型行为类型百分数是 22.43%,对照组 A 型行为类型的百分数是 51.39%。气功组的 A 型行为类型的百分数明显低于对照组。

2. 以 30 分为标准,气功组和对照组的结果的 X^2 考验表明: $X^2=17.05$ $p<0.001$,差异是显著的。

3. 气功组的平均数与标准差是 24.517 ± 8.516 。对照组的平均数与标准差是 29.813 ± 7.696 。气功组和对照组的平均数的考验表明 $t=4.784$, $p<0.01$,差异是显著的。

根据我这个研究结果,我认为坚持气功锻炼对改变 A 型行为类型是有帮助的。

三、气功对心身疾病的治疗效应与症状改善

我设计了气功对身心疾病症状作用的 40 个问题的问卷,气功对症状的作用分为六级,即加重很大、加重、没变化、减轻、减轻很大和消失。我调查了 100 例身心疾病患者包括冠心病、高血压、溃疡病和神经衰弱症。这 100 人练气功,他们仅回答他们有的症状,100 例分成两组,一组练气功两年以上,一组练气功两年以下。

研究表明:

(1)气功对心身疾病症状的大多数项目的有效率是从 50%—80%。

(2)气功对心身疾病症状的大多数项目的治愈率是 20%—45%。

(3)练功两年以上比练功两年以下组的有效率和治愈率高。

我还用上述问卷研究了 33 例癌症病人,获得了相似的结果,按照这个结果我认为:气功对身心疾病有好的治疗效果。

1—29 气功与青年人智力及人格因素的相关性测查

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本实验的目的在于测查较长时间的气功锻炼对青年人的智力及人格因素能否产生影响。

方法:本实验应用“瑞文标准推理测验”以及“爱德华个人偏好量表”,在一年期间,对学练气功的气功组和未学练气功的对照组两组大学生,进行了两次自身及组间对照测查。

结果:“瑞文标准推理测验”的得分在两组学生的各次自身及组间对照测查中均无显著性差异。“爱德华个人偏好量表”在对照组的自身对照测查中,第 3 项 ord(秩序需要)得分显著增高(首次 13.818 ± 4.838 ,第二次 15.394 ± 3.733 , $p < 0.05$),第 7 项 int(省察需要)得分显著降低(首次 16.788 ± 5.561 ,第二次 14.697 ± 3.748 , $p < 0.05$);气功组自身对照及两次组间对照测查均无显著性差异。

讨论:“瑞文标准推理测验”的结果说明,较长时间的气功锻炼对青年人的逻辑思维能力无显著性影响。“爱德华个人偏好量表”的测查中,对照组在一年的大学生活中秩序需要加强而省察需要减弱,气功组则无此变化,说明较长时间的气功锻炼对青年人的需要倾向有一定的稳定性作用。

1—30 智能气功对大学生记忆力影响的研究

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本文通过自愿参加练功及科研测试的 17 名大学生进行了练功一月前后多种对比观察,并经统计学处理,提示差异性有显著意义。说明了:

1. 按照本功法的要求认真练功,确能提高大学生多方面(方向、数字、顺序、彩片)的记忆力。
2. 经过练功,可以增强多方面记忆力,使之保持在 24 小时范围内,从而加深记忆力的后延作用。
3. 不仅说明每一次练功都能增强记忆力,而且这种增强在实际“应激”应用上,将会有其现实意义。
4. 本文所选用的智能气功中的“棒气贯顶法”、“三心并站桩”,确有提高大学生记忆力的作用。且易学易练,宜普及推广。

1—31 气功外气对微生物生物效应的研究

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发放气功外气*分别处理原核微生物——金黄色葡萄球菌,绿脓杆菌、蜡状芽孢杆菌,真核微生物——酿酒酵母及生物大分子——7种果胶酶。经十三次重复实验,从以下几个方面证明了气功外气的物质性。

第一,气功外气处理金黄色葡萄球菌八分钟,死亡率高达76%,相当于2%的石碳酸同等时间杀菌率的1.29倍。第二,气功外气对不同细菌的致死影响有一定差异,芽孢杆菌低于非芽孢菌(前者为41.9%,后者为72.9%)而且,对不同发育阶段的细菌也显示了不同的影响,如蜡状芽孢杆菌的营养体为50%(四次平均数),芽孢休眠体为41.3%。第三,气功外气不仅对原核微生物,而且对真核微生物(卡尔斯伯啤酒酵母)也有34%的致死作用。第四,气功外气能引起金黄色葡萄球菌、绿脓杆菌对二十二种药物抗性的变化。第五,气功外气对果胶酶活性有明显影响。第六,气功外气可穿过玻璃而达到作用对象,表现了外气强大的穿透力及方向性。总之,气功外气对微生物生物效应与理化因子所表现的生物效应极为相似,因而气功外气物质性的论证是可靠的,能令人信服的。

本研究在组织了五位来自不同单位的、具有高级职称的内行专家进行严格的现场验收后,于1991年11月6日顺利通过省级鉴定,得到了与会专家学者的高度评价。

* 本研究中气功外气由元极功传授员发放。

1—32 气功外气与物化因子对棘孢小单孢菌原生质体诱变的比较研究

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小诺霉素是一种新型的氨基糖苷类抗生素。由于其毒性低,抗菌谱广,越来越受到人们的青睐。但由于其发酵液中小诺霉素只含60%,后处理周期长,成本高,限制了大规模推广。业已证明,气功外气具有物质性,具有可能动摇微生物遗传性而应用于高产菌株的选育。为此,我们利用紫外线——8MOP复合处理、激光、气功外气处理小诺霉素产生菌的原生质体选育小诺霉素高产菌。用紫外线——8MOP复合处理原生质体,照射时间分别为30sec、60sec、90sec和120sec,相对再生率为86.3%、33.3%、17.6%、14.4%;用激光处理原生质体,能量分别为5mJ、8mJ,死亡率分别为83.7%、87.6%;用气功外气处理原生质体,时间为5min及8min,死

亡率为 91.67% 及 85.5%。三种方法处理后的再生菌落分化不尽相同:激光处理后,再生菌落分化不明显,颜色单一,基本为桔黄色;气功外气处理后的再生菌落分化很明显,大小、颜色差别很大;紫外线——8MOP 复合处理后的再生菌落分化也不明显,黑色菌落占大多数。再生菌株的突变率情况也有差别;气功外气处理后的再生菌株的正变率比激光及紫外——8MOP 的正变率均高,其中筛选出的 4Q-5-32 含量达 75%。由此可以看出,气功外气与其它物理化学诱变剂一样具有下列性质:①可杀死微生物;②可改变菌株的性状。气功外气完全可作为一种诱变剂应用在工业育种方面。

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1-33 气功外气治疗脊髓损伤的重复实验研究 ——小型实验猪临床研究

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本文采用中国实验用小型猪 18 只,分 A. B. C 三组以 400gcf(50g×80cm)打击量垂直校正直接致伤脊髓造成截瘫,C 组为对照组,以八卦循导功气功外气对致伤的小型实验猪进行 2—3 次/日治疗,观察脊髓损伤急性期及近期的临床疗效和作用机理。观察 A 组截瘫猪经治疗 89 天后均能行走,神经功能不同程度得到了恢复;B 组神经功能恢复占 83.0%;C 组无一例能站立。各组结果有显著性差异($p < 0.01$)。尸检所示,脊髓粘连、变细与截瘫程度成正相关性。本文结果表明,八卦循导功外气在脊髓致伤局部所产生的调和气血、疏通经络的生物效应,对改善脊髓损伤的局部血液循环,有良好的活血化瘀作用,并有较好的镇静、止痛效果。实验证明:八卦循导功对 ESCI 有较好的医疗效果,ESCI 的疗效取决于早期治疗。

1-34 内气外放对神经膜钠通道开关动力学的调制作用

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气功师发放外气,治愈疾病,已有很多报导。本文用现代电生理电压钳位和膜片钳(patch clamp)法,从细胞水平研究培养小白鼠神经节细胞 Na 通道开关动力学与外气作用关系,对 Na 通道时间依赖性的调制作用,探讨气功外气与生物电的关系,为外气的作用性质提供线索。初步结果如下:

1. 在电压钳位条件下,保持电位 H. P. = -50mV,膜电位 $V_m = -10mV$,钠电流 $I_{Na} = -0.46 \pm 0.02 \mu A \cdot cm^2$ (小白鼠膈神经大轴突)。气功师距大轴突 0.5 米处劳宫穴发放外气 15 分

钟。6分钟时, I_{Na} 峰值增加; 10—12分钟, $I_{Na} = -0.70 \pm 0.01 \mu A \cdot cm^2$, 持续 8—12分钟, 以后 I_{Na} 逐渐恢复正常。 I_{Na} 峰值增加约 40%, 模拟组 8.6%, 对照组 2.7% (表 1)。

表 1 气功外气对神经膜钠电流 I_{Na} 峰值的影响

组 别	例 数	发功部位	发 功 前	发放外气 14 分钟	I_{Na} 峰值增加%
气功师组	46 次 (14 人)	劳宫穴	-0.45 ± 0.16	-0.63 ± 0.27	40
模 拟 组	42 次 (14 人)	劳宫穴	-0.46 ± 0.20	-0.50 ± 0.02	8.6
对 照 组	42 次 (14 人)	劳宫穴	-0.44 ± 0.20	-0.48 ± 0.14	2.7

注: 1. 气功师组功法不一, 包括练功时间 4—25 年, 差异很大。为了统一起见多在上午 10:00 发气实验。每位气功师做三次, 个别的四次。

2. 模拟组为练功 4 个月—1 年者, 个别人效果比较明显。

3. 对照组为不会气功者, 但有一人效果明显。

2. 培养小白鼠乳鼠神经节细胞 Na 单通道平均电导 $10.6 \pm 0.01 ps$, 平均道通 (开放) 时间为 $2.1 \pm 0.02 ms$, 距材料 0.5 米处劳宫穴发放外气, 14 分钟时, 通道平均道通时间为 $2.48 \pm 0.01 ms$, 增加约 58% (二名气功师), 五名中另二名气功师、模拟组、对照组均无作用。其中一名气功师可减少通道道通时间, 平均值为 $1.8 \pm 0.01 ms$, 减少约 14.5%。

表 2 气功外气对乳鼠神经节细胞 Na 单通道道通时间的影响

组 别	例 数	发功部位	通道平均道通时间 (ms)		通道道通时间 增加%
			发功前	发气 14 分钟	
气功师组	20 次 (5 人)	劳宫穴			
1	4 次 (1 人)	劳宫穴	2.1 ± 0.03	3.0 ± 0.02	58
2	4 次 (1 人)	劳宫穴	2.0 ± 0.02	3.1 ± 0.02	60
3	4 次 (1 人)	劳宫穴	2.2 ± 0.02	2.2 ± 0.02	0
4	4 次 (1 人)	劳宫穴	2.0 ± 0.01	2.0 ± 0.01	0
5	4 次 (1 人)	劳宫穴	2.1 ± 0.01	1.8 ± 0.01	减少 46
模拟组	20 次 (5 人)	劳宫穴	2.3 ± 0.02	2.3 ± 0.02	0
对照组	20 次 (5 人)	劳宫穴	2.2 ± 0.02	2.2 ± 0.02	0

3. 气功师发放外气作用于神经膜 Na 通道成功率不高, 并非每次有效, 有效率约 24.6%。其效果与气功师 24 小时内发气的时间、生理、心理状况有关。一般来说下午好于上午, 尤以发气者自身感觉最佳时发放外气时的效果最明显。

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1—35 气功“外气”对正常受试者脑电影响的功率谱研究*

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气功师在除去心理暗示的情况下,发放“外气”对别人施加影响,仍是一个有争议的问题。脑电功率谱分析是较成熟对大脑功能研究的技术。本实验通过严格设计,避免了心理暗示对外气接受者的作用,同步记录一名气功师对 12 名正常受试者发放“外气”时气功师和受试者的脑电。设置模拟组为普通人模拟气功师对受试者发放“外气”。用计算机对脑电进行功率谱分析,发气前采样 2 次平均,发气中采样 4 次平均。

实验结果表明当受试者接受气功“外气”时,其脑电的变化主要发生在功率谱的 beta 段, beta 段功率值比对照明显升高。beta 1 段 Fp2、C3、C4、O1、Pz 5 个点功率值的升高有统计学意义, $p < 0.05$ 。在 beta 2 段 C3 和 C4 二个功率值的升高与接受“外气”前的自身对照相比有显著性差异。当气功师发气时其自身脑电的 beta 段功率也升高,除 beta 1 的 C4 和 Pz 点, beta 2 的 C4 点外,其余各点的增加均有统计学意义。模拟组中受试者接受非气功师模拟发气时与自身对照相比,脑电 beta 段功率无明显变化。

受试者 beta 波功率与气功师发放外气时其自身脑电 beta 波功率发生相似的变化提示:气功师通过某种途径即“外气”影响了受试者的脑电波。但其作用原理和意义目前尚不明了,有待于进一步研究。

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1—36 用脑电图观察气功的暗示效果

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在日本气功是引起人们兴趣的,在理论方面有人认为外气功和催眠术同样是受暗示而起作用的,我以脑电图检测为手段,采用排除一切暗示因素测定了气功和催眠术。

方法为气功师和受测者完全隔开式,用录音带通过耳机给受测者以放松入静等指示。在语言和动作上不受任何暗示,受测者的状态用摄像机录相。气功师在屏风后给受测者发放外气。

催眠师以无言法,任何暗示性动作语言都不使用。

根据以往测定的已知资料可知,气功师的 α 波在发气时 1) 从头后部向前部延伸, 2) 脑后

波和脑前波的波形、相位、周期由不同变为一致。3)接受气功的人和气功师出现一致波型、相位、周期。 β 波:以气功师不同出现各种不同的形状,但是受气者和发气者相一致。

本次的测定可见气功师在发气时 α 波和以前测定相一致。受测者特别在接受外气时更为明显。 β 波在这次检测中由于气功师本身的变化不明显,受测者也没有大的变化。催眠术的测定可见、施术者采用无言式时, β 波在左言语区未出现,而受测者6名 β 波在左语言区中出现。受测者皆多回接受过催眠术治疗过的人。当排除暗示因素时,两者有不一致处存在。

结论为:气功在排除暗示可能存在下,气功师和受测者脑电图相一致;催眠术治疗在排除暗示存在后,施术者和受测者脑电图不一致。

1—37 气功对实验性炎症及中性粒细胞化学发光的作用

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气功对多种炎症性疾病有明显治疗作用,但疗愈机理未完全阐明。本文观察智能气功对角叉莱胶所致实验性炎症(脚爪水肿)的作用,并与经典的抗炎药氢化考的松的作用进行比较;同时观察气功对重要的炎症细胞中性粒细胞(PMNS)化学发光(CL)的影响,为阐明气功的疗愈原理积累一些实验资料。

实验用 Wistar 种雄性大白鼠,体重 200~250 克。以 1%角叉莱胶 0.1ml 注入大鼠后肢脚爪皮下,复制水肿性炎症模型,以致炎后 6 小时足蹠部周径增加值表示炎症程度;以 1%糖原 20ml 注入大白鼠腹腔,4 小时后收集分离 PMNS。发光系统组成如下: 5×10^6 PMNS, 0.1mmol/L 鲁米诺 0.1ml 及经调理的酵母多糖 1mg。用生物发光仪测定 CL 读数。

结果表明:(1)气功对角叉莱胶所致实验性炎症有明显抑制作用。单纯致炎组的足蹠部周径增加值为 $0.557 \pm 0.035\text{cm}$ ($n=26$, $\bar{X} \pm \text{SE}$,下同);智能气功组为 0.277 ± 0.021 ($n=26$),明显低于单纯致炎组 ($p < 0.01$);并接近于氢化考的松组的 $0.206 \pm 0.028\text{cm}$ ($n=26$)。(2)气功对 PMNS 的 CL 有增强作用。空白对照组(即不加酵母多糖)的 CL 读数为 4.7 ± 0.1 ($n=22$);PMNS+酵母多糖组为 168.7 ± 16.2 ($n=22$; $p < 0.01$);PMNS+酵母多糖+智能气功组的 CL 明显增加为 236.3 ± 23.5 ($n=22$, $p < 0.01$)。

中性粒细胞是重要的炎症细胞,它的活化及其产物溶酶体酶,氧自由基等在炎症反应中起重要作用。本文观察到气功对角叉莱胶所致炎症有明显保护作用,而且其作用强度接近于氢化考的松;还观察到气功对中性粒细胞的活化(CL)有增强作用。气功的作用十分复杂,其疗愈机理有待进一步探讨。

1—38 气功外气在培养神经细胞自由基损伤中的保护作用

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用 Wistar 新生当天大鼠大脑皮层进行原代神经细胞培养。8 天后,把培养皿分为气功组、损伤组及正常对照组,前二组用抗坏血酸体系产生 $\cdot\text{OH}$ 自由基作用细胞,观察到损伤组的神经细胞肿胀,光晕不明显,胞质折光减弱,尼氏体减少。培养液中乳酸脱氢酶(LDH)漏出增多,细胞内谷胱甘肽过氧化物酶(GSH-Px)活力改变较大。而气功组培养液内 LDH 漏出量明显减少,与损伤组相比,统计学分析有显著意义,细胞内 GSH-Px 活力稍有变化。

本文结果提示:气功外气可能有清除 $\cdot\text{OH}$ 自由基、保护神经细胞膜的作用。

1—39 气功态下人体场对血瘀大鼠红细胞的结构与功能影响

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气功学是一门古老的医学,而现在被人们重新认识,利用其延年益寿、提高人体免疫功能的现代医学手段,特别是对一些慢性疾病、疑难病的治疗更有其独特的作用。曾有许多文献报道药物对机体微循环的作用,但尚未见到有关气功态下人体场对机体红细胞膜结构和功能影响的报道。对于人体能场现象的研究调查,英尤欣(Inyushin)根据许多研究者的著作,提出了关于人体能场的一种能量基质模型,而这种基质模型又构成了机体赖以存在的基质结构。从这种能量基质模型发展起来的一些方法目前在医疗上应用。我室以前的实验证明,气功态下人体场能使血瘀大鼠的血液流变性得到改善。本实验研究结果表明:接受气功态人体能场对血瘀动物红细胞结构与功能亦有保护作用,使红细胞及肝组织过氧化脂质含量明显下降,红细胞 2,3-DPG 含量降低,红细胞膜唾液酸含量得以恢复。从而说明气功态下人体能场使生物体细胞免受或少受自由基损伤,证明气功师在练功时产生的人体能场对紊乱了的机体起到一定的调理作用。但是,对于膜蛋白结构的损伤缺乏保护作用。我们利用血瘀动物模型的血瘀症候的改变,观察气功态下人体场对红细胞膜的作用,探讨人体能场(气场)调节机体代谢的作用机理。

1-40 流式细胞分光光度法分析气功“外气”对人体肝癌细胞(BEL-7402)的影响

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本实验采用了先进的流式细胞分光光度计(FCM)技术,对“外气”作用后 BEL-7402 的细胞学与遗传学参数进行了客观定量的分析。

实验结果如下:

一、气功“外气”对 BEL-7402 细胞分裂周期及细胞 DNA 含量的影响 BEL-7402 细胞的 G_1/G_0 和 G_2 期占细胞分裂周期的比例分别为 67%与 10%,S 期为 15%。“外气”作用下 G_1/G_0 和 G_2 期的比例则随着处理次数的增加而逐步增加, G_1/G_0 由 71%增加到 74%, G_2 由 10%增加到 13%,其 S 期则减少到 11%。其 DNA 含量也相应降低。

二、气功“外气”对 BEL-7402 的染色体核型的影响 经“外气”作用后 BEL-7402 的染色体完整性有所增加,核型图谱规则,全部染色体分布成大、中、小三个部分;对照组的染色体分布则较不规则。

三、裸鼠转化实验

将对照 BEL-7402 与气功处理后的癌细胞分别接种于裸鼠,结果发现未经“外气”处理的癌细胞可诱发肿瘤;而经“外气”处理的细胞则不再具有诱发肿瘤的效应。FCM 分析结果也证实诱发实体瘤组织块细胞的 DNA 含量明显出现异常,非整倍化现象严重,表现出肿瘤细胞的特征;而未诱发肿瘤处的细胞则十分正常。

1-41 气功“外气”对人体肺腺癌细胞(SPC-A1)ConA凝集反应效应的研究

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正常细胞具有接触抑制的特性。癌细胞由于细胞膜异常,失去了接触抑制的能力,从而表现出恶性生长与转移等性状。本实验以 ConA 介导的细胞凝集反应为研究对象,对气功“外气”对 SPC-A1 细胞膜的影响进行了初步研究,并对参与细胞相互识别的膜糖蛋白以及 ConA “受体”作了分析。

经多次重复实验。我们发现气功“外气”确实可降低 ConA 介导的癌细胞凝集程度。并随“外气”处理次数的增加而愈加显著。细胞膜糖蛋白的电泳图谱也发生了相应的变化。一些高分子量的糖蛋白带消失,却增加了一些分子量较低的糖蛋白带。这便从蛋白质分子水平表明气功“外气”对 SPC-A1 的细胞膜确实有所影响。膜糖蛋白的变化也许正是“外气”作用后癌细胞 ConA 凝集反应降低的部分生化机理。以 FITC 标记的 ConA 为荧光探针,用直接荧光免疫

法对 ConA 受体的变化进行了分析。FCM 检测结果表明在“外气”作用下,ConA 受体的量有所减少、在细胞膜上的分布也发生了变化。这一变化可能是导致癌细胞凝集反应趋向正常化的主要机理。

1-42 气功外气、 γ 射线对体外培养的人鼻咽癌细胞的抑制作用

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采用体外培养的人鼻咽癌细胞株 CNE-2 为靶细胞,将细胞接种于 96 孔微量塑料培养板,每孔接种 50 个细胞,一块为一组。分组如下:对照组(G);2Gy γ 射线单纯放射组(R);气功外气处理组(Q);放射加气功外气组(R+Q)。培养 2 天后,在倒置显微镜下观察计数细胞克隆数(≥ 8 个细胞)。结果发现 R+Q 组的克隆均数($\bar{X} \pm SD$)为 9.2 ± 2.5 ,明显低于 R 组(15.8 ± 2.4)。统计学差异非常显著($p < 0.001$)。动力学研究显示,48 小时 Q 组的克隆数(16.5 ± 2.2)近似于 R 组,然后有明显回升,然而 R 组放射后 48~96 小时内克隆数却是继续下降。单纯气功外气可以杀死或抑制体外培养的 CNE-2 细胞,但这种作用与 2Gy γ 射线相比有高度的可逆性。

1-43 气功外气对卡氏肺孢子虫实验动物感染影响的初步研究

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卡氏肺孢子虫(Pneumocystis Carinii 简称 PC)作为艾滋病(AIDS)的主要致死性合并感染病原之一已引起广泛重视,特别是近二年来卡氏肺孢子虫肺炎(简称 PCP)病例呈上升趋势。本文首先报道气功外气对 PC 感染大鼠和裸小鼠的初步结果。

一、取体重 150~200 克健康雌性 Wistar 大鼠 80 只,随机分为 A 组(26 只)、B 组(28 只)、C 组(26 只)。A 组与 B 组分别由二名气功师发放外气,每次 15 分钟,隔日一次,共 7 次。C 组为模拟气功对照组,由一名未学过气功的人员模拟外气动作,然后按常规卡氏肺孢子虫肺炎动物模型方法给药:醋酸可的松每只鼠 25mg/次,皮下注射,每周二次;同时饮水中加入盐酸四环素,按 1mg/ml 的比例让其自饮,定时喂以低蛋白饮食(含蛋白质 7%),每周称体重一次;给药后继续对大鼠发放外气一周,用药后 4~8 周剖检。

实验结果发现:三组鼠用药后体重有不同程度下降,但以对照组 C 组体征下降更为明显。三组 Wistar 大鼠 PC 感染情况见表 1:

表 1 三组 Wistar 大鼠 PC 感染情况比较

动物组别	数量	PC(+)	感染率(%)	X ² 检验
A	26	17	65.4	A : B p>0.05
B	28	14	50.0	B : C p<0.01
C	26	24	92.3	A : C p<0.01

三组实验鼠 PC 感染度差异见表 2:

表 2 三组 Wistar 大鼠 PC 感染度的比较

动物组别	PC 阳性数	感 染 度		
		重	中	轻
A	17/26	1	9	7
B	14/28	3	1	10
C	24/26	12	10	2

从三组 Wistar 大鼠肺组织切片 Giemsa 染色检查均发现典型的 PC 虫体特征。测量三组实验鼠来源的 PC 包裹大小,结果为各组之间无统计学显著差异。

本实验初步结果表明气功外气明显降低 Wistar 大鼠对 PC 的感染率及感染程度,这将对 AIDS 防治有所提示,为 PC 的研究及 AIDS 的研究提供新的途径。至于气功外气对 PC 感染的机制如何,有待进一步探讨。

二、实验 NCS 系裸小鼠随机分二组,甲组(10 只)接种含虫肺匀浆悬浮液 0.05ml 于双侧肺,每只鼠接种 PC 包裹约 $5\sim 8\times 10^{-3}$ 个;乙组(10 只)经外气处理后含虫肺匀浆悬浮液,即将含虫肺匀浆置于圆形玻璃皿中,气功师对其发功,每次发功 20 分钟,共发功四次,每次发功间隔 48 小时。

实验结果表明:甲组 10 只均感染上 PC,其中有 4 只为中度感染;而乙组只有 6 只感染上 PC,6 只阳性中均为轻度感染,二组间有差异。本实验结果表明:气功外气对裸小鼠感染 PC 是有影响的,并且提示这种影响的机制很可能是气功外气对 PC 虫体产生一定的抑制作用所导致的,这为临床上 AIDS 的治疗提供了实验数据。

1-44 气功外气对人鼻咽癌细胞株裸鼠成瘤的双盲试验

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本项研究应用细胞培养技术,以裸鼠为实验动物,按双盲法进行了两次实验:由气功师发放外气作用于人鼻咽低分化鳞癌细胞株(CNE-2),然后将受功组和非受功组(对照组)细胞分别接种于 16 只雌性裸鼠(NC-2 裸小鼠),结果显示受功组成瘤受到明显抑制,两次实验抑制率

为 100%(3/3)、100%(4/4),两次实验组织检查证实受功组裸鼠接种癌细胞部位的组织均未见癌,肝、肺组织也未见癌细胞,非受功组裸鼠瘤组织均为低分化鳞癌,除第一次实验的 2 号鼠见肺转移癌外,其余各裸鼠肝、肺均未见癌细胞。本项研究提示有进一步研究气功外气抑瘤及其机理的必要性和可能性。

1—45 气功外气对癌瘤生长、转移及宿主存活时间影响的实验研究

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为了研究气功外气对癌瘤生长、转移和宿主生存时间的影响,用 114 只动物肿瘤模型分三个实验进行了研究。小鼠癌瘤模型是通过给小鼠移植小鼠宫颈癌 U27 或小鼠纤维肉瘤 MO₄ 来形成的。移植瘤细胞后,随机将动物分为气功组和对照组,两组动物在同样条件下饲养。於移植瘤细胞后第 2 天或第 7 天开始,每天给气功组动物进行外气治疗 10—30 分钟,对照组不给任何处理。在实验 1,於移植瘤细胞后第 20 天,同时处死两组动物,分别测量每个动物肿瘤体积的大小。在实验 2,於移植瘤细胞后第 23 天和 33 天分两批同时处死两组动物,分别取出腋淋巴结和肺进行病理组织学检查。在实验 3,当带瘤动物自己病死时,分别记录和计算两组动物移植瘤细胞后的生存时间天数。

实验结果发现:在实验 1 中,31 只气功组动物平均肿瘤体积为 $2.52 \pm 5.35 \text{cm}^3$,明显地小于 32 只对照组动物的平均肿瘤体积 $6.32 \pm 10.02 \text{cm}^3$,两组间 $p < 0.001$ 。在实验 2 中,气功组动物肿瘤淋巴结转移率仅为 1/16,明显地低於对照组的 6/15,二组间 $p < 0.05$ 。气功组肺转移率为 2/16,对照组为 3/15,两组间 $p > 0.05$ 。在实验 3 中,气功组 10 只带瘤动物的平均生存时间为 35.4 天,比对照组 10 只带瘤动物平均生存时间 30.4 天显著延长,两组间 $p < 0.002$ 。

以上实验结果表明,气功外气能够延缓癌瘤的生长,降低肿瘤的转移率,并能延长带瘤动物的生存时间。

1—46 气功外气对小鼠肿瘤防治效果的观察(之一)

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为进一步明确气功外气在肿瘤预防及治疗中的作用。我们采用随机分组的方法,分别将 30 只小鼠分为肿瘤对照组、气功预防组及气功防治组。对气功预防组及气功防治组在接种肿瘤前进行 2 周的气功外气预防,接种后继续对气功防治组进行 2 周的气功外气治疗。同时处死 3 组小鼠,分别观察各组小鼠体重、脾脏、胸腺重量及肿瘤净重变化。结果表明:气功外气在一定程度上可减少肿瘤的发生率,即使在肿瘤生长后,坚持应用气功外气进行治疗,仍可以取得

较为明显的抑瘤效果。此外,短期的气功外气作用,对机体整体(包括体重及脾脏、胸腺等免疫器官)的影响甚微。提示:气功外气的作用可直接抑制肿瘤细胞的生长,具有短期明显的疗效,这与我中心以前的研究结果相符,至于长期坚持练功能否影响机体各器官的变化,尚有待进一步研究探讨。

1-47 外气对小鼠 MO_4 肿瘤的治疗作用

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实验由三部分组成。实验(1)用 17 只雄小鼠在腹腔内注射 $1 \times 10^5 MO_4$ 小鼠纤维肉瘤细胞,随机分二组。治疗组在接种肿瘤后第二天开始“外气”处理移植 MO_4 肿瘤的小鼠,每天 30 分钟。实验(2)用 17 只雌小鼠方法同上,只是治疗组接种后第 7 天才开始外气处理。实验(3)用 20 只雌性小鼠,皮下注射 $1 \times 10^5 MO_4$ 细胞,治疗组 7 天后给外气处理。统计结果发现:实验(1)和(2)“外气”处理组的肿瘤体积比对照组小,(1) $p=0.024$, (2) $p<0.001$ 。但生存期两组间无显著差异。实验(3)中,气功处理组与对照组的生存期和每天肿瘤生长体积的差异均有统计学意义($p_{生存期}=0.02$, $p_{肿瘤体积}=0.012$),但最终肿瘤体积无统计学意义。

以上结果说明外气对小鼠的 MO_4 肿瘤具有一定的抑制作用。这只是初步实验,我们希望试验外气对其它肿瘤的作用。

1-48 气功外气对红细胞免疫粘附肿瘤细胞功能的研究

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本文以肿瘤红细胞花环为观察指标,报导气功外气对小鼠红细胞免疫粘附肿瘤细胞功能的影响,发现:(1)小鼠红细胞对艾氏腹水癌细胞可形成肿瘤红细胞花环;(2)气功组小鼠的肿瘤红细胞花环率平均为 31.68 ± 6.19 ,对照组小鼠的肿瘤红细胞花环率平均为 26.44 ± 7.43 ,两组比较增高率达 19.82%,研究结果经统计学处理, $p<0.01$,证实了气功外气对小鼠红细胞免疫粘附肿瘤细胞有非常显著的促进和增强作用。从而提示,气功外气可促进红细胞膜补体受体与肿瘤细胞反应形成花环,这是肿瘤免疫学中一个新的研究领域,为肿瘤治疗及机理研究指出新的探索方向,同时对临床推广应用有重要意义,红细胞免疫活性指标的检测,对于观察患者免疫状态,断判气功治疗效果以及提示疾病预后,均有很大的参考价值。

1-49 气功外气对小鼠脑皮质损伤引起其 K 细胞的抗体 依赖细胞介导的细胞毒作用(ADCC)影响的研究

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本文采用机械造成小鼠左右脑皮质损伤,观察左右脑皮质损伤对其 K 细胞 ADCC 作用的影响,同时观察气功外气对小鼠左右脑皮质损伤引起的 K 细胞 ADCC 活性变化的效应。实验结果表明:左右脑组织损伤小鼠组织学检查发现:小鼠损伤部位皮质破损,皮质神经细胞液化性坏死,吞噬细胞浸润,并有神经胶质细胞轻微增生,证明模型小鼠确实产生了脑皮质损伤;左右脑皮质损伤小鼠确有 ADCC 活性变化,左脑皮质损伤引起 ADCC 活性降低($p < 0.001$);右脑皮质损伤引起 ADCC 活性升高($p < 0.001$)。在此基础上,我们观察气功外气对左右脑皮质损伤所致 ADCC 活性变化的调节作用,发现气功外气对左脑皮质损伤所致的 ADCC 活性降低有升高作用,而对右脑皮质损伤所致 ADCC 活性升高有降低作用,表明气功外气双向调节这种左右脑皮质损伤所致 ADCC 活性不平衡,恢复到一定程度的平衡状态。

1-50 气功外气对应激小鼠免疫功能的调整作用

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本研究采用小鼠冷水应激刺激模型,观察应激刺激对机体免疫功能的影响,同时观察气功外气对此影响的调整作用。

NIH 雌性小鼠,随机分三组:1)正常对照组。2)应激组:每日强迫小鼠在冷水中($14^{\circ}\text{C} \pm 1^{\circ}\text{C}$)游泳 5 分钟,连续 8 天。3)外气治疗组:每日冷应激刺激后即接受 30 分钟的外气治疗。最后一次治疗毕,实验用小鼠眼球取血断颈处死,称体重、胸腺重、脾脏重、脑组织重及肾上腺重,计算脏器指数,同时制备脾细胞悬液常规检测其 T、B、K 细胞活性。

实验结果表明:1)应激小鼠的 T 细胞功能明显下降(10084 ± 549),与正常对照组比(18270 ± 1069)差异显著($p < 0.01$);气功外气对应激引起的 T 细胞功能下降有明显的恢复作用(23582 ± 1959),与应激组相比 $p < 0.01$ 。2)应激小鼠的 B 细胞增殖能力明显下降(5074 ± 499),与正常组比(13704 ± 855)差异十分显著($p < 0.01$),外气治疗组 B 细胞功能明显增强(14601 ± 900),与应激组比差异十分显著($p < 0.01$)。3)应激小鼠 K 细胞 ADCC 活性明显降低(0.128 ± 0.004),与正常组比 $p < 0.001$,外气组小鼠 ADCC 活性明显增强(0.505 ± 0.001),与应激组比 $p < 0.001$ 。4)应激小鼠的胸腺指数(3.57 ± 0.64),脾脏指数(4.76 ± 0.75)均明显小于正常组的胸腺指数(4.28 ± 0.63),脾脏指数(5.67 ± 1.16),两组比较 $p < 0.01$ 。外气治疗组的胸腺指数(4.10 ± 0.49),脾脏指数(5.22 ± 1.06)均有不同程度的恢复,尤以胸腺的恢复最为

明显($p < 0.01$)。5)应激小鼠的脑重量有减轻趋势(20.6 ± 1.5),与正常组比(22.0 ± 1.4)差异显著($p < 0.05$),外气治疗组动物脑重量明显恢复(22.2 ± 1.5),与应激组比差异十分显著($p < 0.01$)。

1—51 气功外气对小鼠生长作用的观察

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本实验着重观察了气功外气对促进小鼠生长的影响。气功外气作为一种物理、化学、生物作用的综合因素,它既能治病又能健身,能否促进生物的生长是一个很需要研究的课题。为了证实这个问题我们于1990—1991年进行了有关此项课题的研究。

实验过程中共观察小鼠六十余只并取得了较理想的结果,实验组小鼠体长的均数为10.26厘米,而对照组为9.86厘米;小鼠后肢骨长度,实验组3.33厘米,对照组3.23厘米。两项均具有统计学意义($p < 0.05$)。与此同时还采用同位素的检测方法测定了小鼠血清中生长激素的含量。在四批实验中,实验组均高于对照组,分别高于0.81、2.3、1.55、1.43ng/ml,两组比较相差非常显著($p < 0.01$)。结果表明,气功外气能够促进小鼠体长和后肢的增长;能够提高小鼠血清中生长激素的含量。提示气功外气对生物的生长具有激发和增强效应。也揭示了气功外气客观存在的生物学证据,为气功学的应用和实验室研究提供了重要的信息和途径。

1—52 穴位贯气对猫足三里刺激皮层诱发电位的影响

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本工作通过向足三里穴位贯气观察对该穴皮层体感诱发电位(SEP)的影响。

使用健康家猫21只,1%氯醛糖(70mg/kg体重)麻醉,固定于屏蔽室内的立体定位仪上。进行常规猫开颅手术,找好记录点。为了防止刺激泛化,采用同心圆电极,进行单肢双极刺激,对侧皮层用直径0.5mm的银球电极进行单极记录。首先观察正常对照。然后请气功师以掌心劳宫穴,距动物30cm处,对足三里穴发气十分钟,同时每隔2分钟记录一次SEP,间歇5分钟,共发三次。收功后30分钟再测一次功后对照。

足三里穴刺激在皮层可引出三个波,分别命名为P16、N27和P40。接受外气后,7例电压升高(33.33%),12例降低(57.14%),2例无变化(9.52%);5例潜伏时延长(23.81%),9例缩短(42.86%),7例没变化(33.33%)。经统计总趋势为潜伏时缩短电压降低,t检验表明,P16波的电压差异显著($p < 0.01$),P40波亦有意义($p < 0.05$);但各波的潜伏时则无显著性差异(见表)。

表 穴位贯气对猫足三里刺激体感皮层诱发电位的影响(mean±SE)

波		P16	N27	P40
气功前	(ms)	16.90±0.27	27.63±0.55	41.04±0.65
	(μ v)	9.50±0.37	32.20±1.36	60.20±2.73
布气中	(ms)	16.76±0.34	26.70±0.60	39.71±0.77
	(μ v)	8.05±0.29**	29.44±1.26	51.75±2.63*
收功后	(ms)	16.96±0.31	27.18±0.59	41.00±0.98
	(μ v)	8.78±0.52	30.38±1.32	57.16±3.76

ms.:潜伏时, μ v.:电压, * $p<0.05$, ** $p<0.01$ 与气功前比较。

刺激躯体一定穴位在大脑皮层特定点记录该刺激的诱发电位活动,是当今医学研究中较常采用的方法之一。根据 SEP 各波的成因,20ms 以内为原发反应,来自丘脑-皮层束和皮层第一体感区,38ms 以内为继发反应,来自皮层第二体感区和联合区活动,大于 38ms 以上为晚反应,来自双侧大脑皮层的弥散性活动。诱发电位的电压反映除极界面的大小和参与兴奋的神经元数目,潜伏时则反映信号的传导速度和距离。说明动物接受外气后,其原发皮层体感区参与活动的神经元数目减少,双侧大脑广泛皮层参与活动的细胞数量亦减少,但参与活动的细胞质量被提高、传导功能加快。这一结果十分类似气功师进入气功态的皮层机能表现。

1—53 关于利用气功师及外气信息模拟装置 促进植物种子发芽、生长的基础实验

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我们聘请三位气功师(都是日本气功协会主任指导员)作了关于利用外气促进植物种子发芽、生长的基础实验。此外,我们还利用外气信息模拟装置(本装置是通过将某一在运用外气治疗慢性病方面取得实际成就的气功师[日本人,家住福岛县]所发放的外气信息记录在数据记录仪上并进行调制,放大后开发制成的)作了关于促进植物种子发芽、生长的基础实验。

在聘请气功师所作的基础实验中,我们首先让气功师用手掌对适量的自来水发放外气,制成“外气水”,然后利用这外气水和普通自来水对 5 种植物的种子进行了观察其发芽、生长的基础实验。在利用外气信息模拟装置所作的基础实验中,同样让信息模拟装置对适量的自来水发放“外气”,并制成了外气水。只是聘请气功师所作的仅仅是外气水的实验,而利用模拟装置所作的除了外气水的实验外,同时还尝试作了直接从上对植物种子经常发放模拟外气的实验。

我们聘请气功师直接对萝卜苗、黄芽菜、雪姬萝卜头、乐地花、洋苏草等 5 种植物种子发放了外气。结果外气水组与作为对照的自来水组相比,除雪姬萝卜头以外显示出有意义的生长效果。在利用外气信息模拟装置所作的实验中,我们选择了萝卜苗。结果表明,与作为对照的自来水组及不具有外气信息红外线水组相比,模拟外气发放组的效果提高了大约 15%(发芽、生长后植物种子的重量比)。

迄今为止,气功在对增进健康、医治疾病方面作出了显著的贡献,然而,我们的实验结果却又启示:气是一种生命的能源并与生命活动的有序化密切相关。还有,气作为一种生命信息对活体(人、动植物、微生物等)生命活动的活性起一定程度的作用。

1—54 气功“外气”对重水作用的红外光谱法研究

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以普通水为对照,用红外光谱法研究了气功“外气”对重水的作用。结果表明:经“外气”作用后的重水其重氢羟基 O-D 的伸缩振动吸收谱带($\text{VD—O}\cdots\text{D}=2500\text{cm}^{-1}$)频率不变,但是吸收强度减小了;而经“外气”作用后的普通水其缔合羟基 O—H 的伸缩振动吸收谱带($\text{VO—H}\cdots\text{O}=3400\text{cm}^{-1}$)频率不变,但吸收强度增加了,证实了前人的研究结果。研究不仅发现“外气”对重水的红外光谱的影响和对普通水的红外光谱的影响恰恰相反,而且发现重水和普通水受“外气”作用之后,其红外光谱的变化与“外气”的作用方式有关。据此,提出了“外气”会影响重水和普通水分子间结构有序性的初步解释。严格的对照实验表明:“外气”对重水或普通水的作用是客观存在的事实。

1—55 意念、气的物质效应——激光拉曼谱试验

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为研究气功态、特异功态能量,对水进行内气外放发功,采用近代测试研究分子结构和分子振动的先进仪器 SPE×1403 型激光拉曼谱仪进行试验测试。为排除地区差、水中杂质,及其它元素可致影响,故采用蒸馏水为测试样品水,并每次都对样品水测出本底谱。还做了鉴别测试:(1)对样品水加热到 48℃;(2)对样品水用 480 GS 强磁作用 20 分钟;(3)常人模拟发功,其结果都没有改变,这就说明人体温,电器所产生的磁场对拉曼谱无影响,及常人(或低功能)模拟发功对拉曼谱无影响。我选用 20 厘米近距发功,4 米外意念发功和 4 公里外远距对样品水发功,其效应都使激光拉曼谱发生了改变。

1—56 气功“外气”对活泼质子化学位移的影响

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本文采用核磁共振波谱法,观察气功“外气”对乙醇、乙酸分子 ^1H NMR 谱的影响,旨在揭示“外气”作用的化学本质。实验计三十余人次,结果表明:1. “外气”较强的气功师“发气”,能够引起活泼质子的谱峰位置移动,而对其他峰则无影响;2. 峰位移动的距离及持续时间与发功人功力的强弱和样品“受气”时间的长短有关;3. 峰位移动的方向可以随某些人的意念而改变;4. 有的样品在峰位移动过程中出现左右摆动现象;5. 气功师组场时,放在场中的样品也发生同样变化;6. 一般人或功力弱者虽延长“发气”时间,也不引起样品变化。

活泼质子峰位的移动,表示样品中氢键数量改变。峰位向高场区移动(右移),说明氢键数量减少;峰位向低场区移动(左移),说明氢键数量增加。如果样品中氢键减少的原因,说成是“外气”释放能量引起氢键破坏,那么,氢键增加的原因则应是“外气”吸收了样品中的能量,引起分子间的缔合。前者的解释尚可理解,后者的推理则不易被人接受。所以,目前的理论尚不能解释上面的实验结果。但是,本实验结果肯定了“外气”作用的客观性和方向性。气功“外气”治病中的双向调节现象,气功对生物体生理生化指标的双向作用,以及“外气”使多种物质的紫外吸收峰出现双向变化的原因无疑与氢键的缔合和破坏密切相关。活泼质子峰位移动的方向有何意义,峰位摆动的原因何在,此种特点与临床治病有什么关系等问题有待进一步研究。

1—57 气功“外气”对高温超导材料特性的影响

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我们的很多实验表明,气功师发放外气可以产生生物效应及化学效应,改变多种物质溶液的特性,核磁共振实验又说明“外气”作用引起生物分子构象改变的基础是氢键。“外气”能否对固态、结构十分稳定的材料产生影响?我们又做了多次实验。本实验中,我们让几位气功师分别对 Y 系、Te 系、Bi 系多晶超导块材发放“外气”,然后测其 T_c 和 I_c 。发现有的气功师可使 T_c 和 I_c 下降,而有的气功师可使材料的 T_c 和 I_c 上升,并且这种变化具有相当的稳定性。

对未经发放“外气”的超导材料,在经历多次由室温到液氮之间的循环后,在其性能变坏、 T_c 和 I_c 都明显下降的情况下,气功师通过对材料“发气”,不仅能使 T_c 和 I_c 恢复到原来的数值,而且还能超过原来的数值。这就是说,“外气”,既能修复又能改善高温超导材料的物理特性。

实验还发现,气功师组场时,放在场内的高温超导材料的 T_c 和 I_c 也会发生双向变化,这和其他生物、化学材料变化的实验结果是相一致的。

目前,我们还正在进行气功“外气”对高温超导(Josephson)器件特性影响的实验研究,工作刚刚开始。鉴于高温超导电子器件已经部分投入应用,预计此项研究会有一定的经济价值。

关于“外气”修复、改善超导材料及超导电子器件特性的物理机制,仍在实验研究之中。

1—58 DNA 分子在气功外气或纯意念力作用下的 增色效应及减色效应研究

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应用紫外吸收法,对小牛胸腺 DNA 及酵母 RNA 在气功外气或纯意念力作用下,对 260nm 紫外吸收进行测定,结果表明:不同气功师发功处理样品,DNA 出现不同的增色效应或减色效应 $p < 0.01$ 。放入 4℃ 冰箱 8—48 小时追踪观察亦可出现进一步的增色效应或减色效应 $p < 0.01$,而 RNA 无变化。提示气功外气或意念力对 DNA 分子构象可能有影响。

1—59 外气对苹果酸脱氢酶效应的研究

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苹果酸脱氢酶(MDH)是生物体内的一种氧化还原酶,广泛地存在于动物的各种组织中,为生物体正常代谢所必须的酶类。我们在发现外气对少数家兔作用后,不同组织 MDH 的活性,产生不同的变化。为了进一步探索外气对不同组织 MDH 的效应,进行了群体实验。实验共分 3 批,每批 6 只家兔,一只作为对照,5 只接受外气作为样品。摘取骨骼肌肉、脾、心、肝、肾上腺、肾、肺组织,以磷酸缓冲液匀浆,采用紫外吸收法测定组织分离液中的蛋白质含量,进而测定 MDH 的活性。对 18 只家兔实验的结果,3 只对照和 15 只样品分别统计后,发现外气对骨骼肌、肺、心脏、脾脏的 MDH 有明显的双向效应,对肝脏、肾和肾上腺的 MDH 趋于抑制效应。肌肉组织的 MDH 活性,对照平均值为 254 单位/mg 蛋白质,而样品中 1 例无变化,11 例升高,平均值为 361 单位/mg 蛋白质,为对照的 143%;2 例降低,为对照的 76%。肺组织中的 MDH 活性,对照的平均值为 230 单位/mg 蛋白质,而样品中有 8 例变化不大,有 4 例升高,3 例降低,有效率为 47%。心脏中的 MDH,对照的平均值为 262 单位/mg 蛋白质,样品中有 4 例变化不大,3 例降低,8 例升高,有效率 73%,降低的 3 例平均值为 194 单位/mg 蛋白质,升高的 8 例平均值为 317 单位/mg 蛋白质。脾脏中的 MDH 活性,对照的平均值为 271 单位/mg 蛋白

质,产生效应的 9 例,占 60%,2 例降低,平均值为 174 单位/mg 蛋白质;7 例升高,平均值为 347 单位/mg 蛋白质。肝脏中的 MDH 活性,只有 3 例降低,有效率仅占 20%,肾脏中有 6 例降低,有效率为 40%。根据实验结果,可看出外气不是对每个生物体都能产生效应,其有效率为 52%左右,在不同组织中,外气对心脏和肌肉的效应最高。

1-60 气功麻醉的原理与实例

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麻醉应是大手术过程中必不可少的手段,而无麻醉状态下进行的小手术有时可见,因某种原因而无法使用麻醉进行大手术的情况也存在。麻醉的目的在于手术过程中患者不感疼痛,而缝合后麻醉药效消失速度越快越好。

气功麻醉只在手术过程中发放外气,停止发放外气后,短时间内可恢复知觉,预后也非常好,是理想的麻醉方法。

从劳宫、指尖发放外气,为何可以止痛呢?人体在受伤后,体内可产生具有止痛作用的内腓肽,达到麻醉效果,因此,外气很强的人,用气功来麻醉是可能的。

对人和动物的实验结果证明,身体状况与外气发放有密切的关系。

外气发放 5 分钟后,其效果与药物麻醉几乎相同,约有 96%的痛觉神经被麻醉,完全可证明气功的麻醉作用。另外,外气停止 10 分钟后,麻醉消失度上升到 24.47%,换言之,72.53%的痛觉可感觉到,如前所述,麻醉作用消失速度快者为上品。

实验证明,气功麻醉是理想的麻醉方法,同时证明,麻醉疗效与气功发放者的身体状况有很大关系。

2. 气功的临床研究

2-1 宏扬有我国特色的老年保健事业

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本文从三个方面论述了宏扬有我国特色的老年保健事业的重要性。首先, 根据科学的推算方法, 认为人类的高寿范围可能在 110~120 岁之间, 而社会及情绪因素的影响往往促使人类过早地衰老、死亡。从而提示: 根据我国国情, 采取必要的老年保健措施, “将是很有价值的一件事”。其次, 在我国, 保健事业的发展具有悠久的历史, 而具有我国特色的保健方式包括饮保健、食保健及气保健。饮以饮茶为主, 是我国对世界文明的一大贡献。据史料记载, 我国至少在汉魏时期就已开始饮茶, 传神农尝百草, 日遇七十二毒, 得茶而解之。饮茶可止渴、消食、除痰、少睡、利尿、明目、除烦、去腻。目前饮茶已进入千家万户、深入人心。食即合理的食物搭配, 中医认为“五谷为养, 五果为辅, 五畜为益, 五菜为充”, “谨调五味, 骨正筋柔, 气血以流, 腠理以密。气为自然万物之本, 人的生死、物的成毁, 都是气聚散变化的结果, 而起源于人类与疾病长期斗争实践的中国气功学则是几千年来我国劳动人民智慧结晶的新生。近年来的研究表明, 气功外气对细菌可以杀伤, 也可促进生长, 这个作用与发功者的功力和意念有关, 说明免疫体系与信息的建立和传递可能有关, 为进一步认识“双向调节”的本质开辟了一个新的科学探索途径。此外, 对病毒、肿瘤细胞的实验证实了气功的科学性、客观性和可重复性, 为气功学发展奠定了理论上的基础。气功学是一个属于未来的科学, 属于人体科学的范畴。气功在医学方面研究较多, 气功学不应局限于医学, 气功学的研究应该包括生物、无生物以及对宇宙的研究。最后, 作者认为如何进行老年保健, 如何运用我国特色的优势、为祖国的建设, 为达到 2000 年人人得到保健起到最小投资、最大效益、发挥作用, 值得大家认真思考, 提出有我国特色的老年保健事业是一项事业而且是应当宏扬的事业。

2-2 气功缓解心脑血管危险因素影响、预防脑卒中的研究

—242 例高血压患者 30 年随访

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脑卒中是一种常见疾病, 高血压、左室肥厚、凝血纤溶系统及载脂蛋白代谢异常均为脑卒中易患因素, 为了评价气功预防脑卒中的作用, 从 1958 年起, 我们在高血压患者中进行了前瞻

性长期对照研究:

一、242 例高血压病人随机分为气功组(气功加规律性服药 $N=122$)和对照组(仅规律性服用降压药物 $N=120$),经 30 年随访对照观察:气功组血压稳定率在 86.81%,而对照组仅为 68.27% ($p<0.01$)。随访期间总累积病死率分别为 25.41%和 47.706% ($p<0.001$),进一步分析气功组脑卒中专项发生率和病死率为 20.49%和 15.57%,而对照组达 40.83%和 32.50%,两组之间有明显差异($p<0.01$)。

二、40 例心电图检测结果:①治疗前 EF 0.57 ± 0.09 ,EFV 0.92 ± 0.30 ,MVCF 68.67 ± 20.40 ,气功锻炼一年后分别为 0.64 ± 0.10 , 1.10 ± 0.26 和 76.4 ± 17.41 ($p<0.05-0.01$)。②治疗前 IVST 12.96 ± 1.64 (mm),PWT 11.38 ± 1.64 (mm),气功锻炼一年和分别为 11.24 ± 1.81 和 9.98 ± 1.32 ($p<0.001$)提示气功有改善心脏功能和减轻左室肥厚的作用。

三、40 例血凝纤溶指标检测结果:治疗前 PAI 9.17 ± 1.57 (Iu/ml),tpA 1.52 ± 0.24 (Iu/ml),ⅧR:Ag 139.40 ± 41.11 (g),AT-Ⅲ 27.99 ± 3.48 (mg/1.68),气功锻炼一年后,PAI 和ⅧR:Ag 分别降低为 8.10 ± 1.68 和 181.50 ± 28.351 而 tpA 和 AT-Ⅲ,分别上升为 266 ± 0.73 和 34.41 ± 7.09 ,提示气功锻炼有改善机体凝血纤溶系统失衡的有益作用。

四、40 例载脂蛋白检测结果:治疗前 ApoA 117.89 ± 31.03 (g/L),ApoB 118.15 ± 18.24 (g/L),ApoA/ApoB 比值 1.00 ± 0.61 ,气功锻炼一年后,分别为 133.58 ± 28.16 , 102.21 ± 19.17 和 1.31 ± 0.71 ($p<0.05\sim0.001$),提示气功有改善载脂蛋白代谢的作用。

根据我们以往及上述研究表明:气功锻炼对增强机体自我调控机能和缓解多种心脑血管易患因素不良影响方面起重要作用。气功是控制高血压预防脑卒中的有效措施之一。

2—3 气功对高血压靶器官损害康复作用的研究

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高血压病是常见的中老年疾病,随着血压增高,疾病发展会引起一系列心脑肾靶器官损害,目前除了降压药物控制血压外,非药物中医传统气功治疗尤为引起人们的重视,本文研究发现中老年高血压患者心脑肾功能状态较同年龄血压正常无心脑肾血管疾病的中老年人差,提示长期血压增高确实使心脑肾功能减退,同时应用以气功为主综合治疗方法,经气功锻炼(一年)前后对比分析,采用现代客观指标发现反映脑功能的脑电地形图异常率明显得到改善从总异常率 63.3%降低至 26.7%有非常显著差异,反映心脏功能喷血分数(EF)和周经纤维缩短率(MVCF)明显增加,心输出量增加,总周围阻力降低,反映早期血管病变及肾功能损害的尿微量蛋白和尿免疫球蛋白明显降低,尿 Alb 从 1.20 ± 0.822 下降至 0.680 ± 0.529 ;尿 IgM 从 0.268 ± 0.100 降至 0.062 ± 0.092 有显著差异提示经气功锻炼后不但能稳定血压同时可延缓心脑肾功能减退,表明气功是一项简便、行之有效的康复治疗措施。

2-4 高血压病练功降压及减停降压药的初步观察

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高血压病是心血管疾病中患病率最高的一种疾病,并发病症多、转归严重。治疗上缺乏无毒副作用的、高效率的、理想的降压药物,由于长期服药还给患者带来了新的问题。本病的非药物疗法中,既往的研究认为气功可配合药物治疗高血压病。在此基础上,笔者从1990年7月至1992年11月,观察了31例服用降压药疗效不理想的Ⅱ期高血压病患者练功后的降压疗效及减停降压药后单用气功稳定血压的情况。

目前,气功治疗高血压病多用上海高血压研究所介绍的“三线放松法”,对单用气功能否取得长期满意的降压疗效尚无把握,服用降压药配合气功者能否完全停服药物尚无定论,一般认为练功只作为高血压病Ⅱ期治疗的辅助方法。高血压病属中医古籍“眩晕”、“头痛”、“肝火”、“肝风”等范围,多与气机升降失常、上升太过、沉降不及有关,治疗原则应是恢复气机的升降平衡。本观察所用功法,动静结合,注重“松”、“降”二点,以实现真正的心身放松,克服既往功法之不足,本功法能引导气机下行,达到气血调和、阴平阳秘。

通过观察初步说明了,练功降压的疗效比单用降压药时理想($p < 0.001$),练习适当的功法可以逐步替代或部分替代降压药,58%的长期服用降压药的高血压病者可以分次减量至停服降压药,经一年观察稳定血压疗效理想,练功可作为治疗高血压病的一种主要手段。降压药物减量、停药对改善服药的适应性、减轻经济负担、改善生活质量很有意义。练功治疗高血压病还具有多方面的优点。关于本观察取得降压疗效及减停降压药的有关机制尚待进一步深入研究。

2-5 导引吐纳功治疗 158 例脑动脉硬化症的临床观察

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本文报导用导引吐纳功治疗158例脑动脉硬化症,经30~180天(平均82天)练功后,结果表明,患者症状减轻有效率达91.83%,体征改善有效率达80.82%,脑电图异常病例比例从练功前(69/132)52.37%,降到练功后之(48/132)36.36%, $p < 0.01$,脑血流图之波幅值改变上表现出明显的良性双向调整作用,练功前脑血流不足者,练功后升高($p < 0.01$),功前正常者,功后亦保持在正常范围($p > 0.05$),而练功前正常偏高者,功后反而降低($p < 0.01 \sim 0.05$);血清胆固醇功前高于正常值者为113例(76.07%)降到功后的72例(54.96%),而甘油三酯功前高于正常者从118例(90.07%)降到功后75例(57.73%) $p < 0.01$,练功前后差异非常显著。从而有力证明气功对防治老年病——脑动脉硬化症是一个较为有效的治疗方法,具有较宽广推

广价值,也证明气功对机体确有平衡阴阳、调整气血和疏通经脉,从而促使机体向“阴平阳秘”的正常状态转化。

2—6 气功治疗原发性高血压30例

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用气功做为首选医疗措施治疗 30 例原发性高血压,男 20 名女 10 名,年龄 30 到 50 岁。

用 Decoder 2000 测量电平衡,这是一种产生 10Hz 低强度脉冲电流的复杂仪器,它能够测量组织的胶体状态以获得有关机体外周组织的摄氧反应的数据。

通过气功练习以获得对血管阻力的直接控制,每周二次定时监测血压。初步的数据提示对血压的控制效果良好。

2—7 高血压病患者,练功要谨慎

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本文用 UA—251 型自动电子血压计和 TP—02 型多点巡回检测式温度计,对 37 名两组高血压病患者的研究,结果表明:

1. 练功得法的第一组,其 SBP,DBP 和 HR 均有明显改善。
2. 意念“百会”,追求开“天目”,发外气,出特异功能的第二组之 SBP,DBP 和 HR 反而变差。
3. 本文建议,高血压病患者练功一定要谨慎,功中一定要意守下丹田以下。

2—8 气功治疗21例肾病的报告

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现代医学中慢性原发性肾小球肾炎、IgA 肾病、肾病综合征、慢性肾盂肾炎、肾功能不全是中医肾病的一部分内容,其病机特点是本虚标实,目前中西医药对其均无特殊治疗方案,属难治性肾病。我科病房自 1988 年 10 月至 1992 年 8 月,收治观察了 21 例肾病患者,此 21 例气功治疗前均在临床状态下行经皮肾穿活检,诊断确切,长期用过中西药物治疗,效果欠佳。病史最长者 18 年,最短者 9 个月。年龄最大者 68 岁,最小者 20 岁。性别男 11 例,女 10 例。依据全

国中医学会内科学会肾病诊断分型、疗效标准和西医《实用内科学》第八版的诊断、疗效标准,进行诊断、分型及疗效判定。在住院气功治疗期间,对长期服用激素者,渐次停用,少数外感型者,辅以中药治疗。气功治疗是以自练为主,每天3~7小时;外气为辅,每天20分钟。总疗程6个月至一年以上。出院后,每二个月门诊随访一次,最多者随访3年,最少者随访半年。

结果:中医分型显效率为52.4%,好转率为19%,总有效率为71.4%;西医病种显效率为53.3%,好转率为23.3%,总有效率为76.6%。作者认为对中西药物治疗无效或少效者,气功治疗能取得如此效果,说明气功治疗难治性肾病优于西药或中药,值得临床推广应用。

作者经临床分析,各项观察指标达显效时间平均为112天,提出气功治疗难治性肾病以四个月为一疗程较宜。同时认为气功疗法是一种整体疗法,既可扶正又可祛邪,对本虚标实,虚实夹杂的慢性疾病是最为适宜的方法。

2-9 自控气功疗法增强癌症患者机体的免疫功能

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本文报告了自控气功疗法对癌症患者细胞免疫功能的影响,我们采用五种不同的方法,分别观察了30例癌症患者用自控气功治疗前后中性粒细胞、淋巴细胞及红细胞免疫功能的变化。结果如下,我们用A及P分别代表治疗前及治疗后的数值。

1. 采用琼脂糖平皿法观察了中性粒细胞的趋化功能:趋化运动距离: $A=1.75\pm0.53\text{mm}$, $P=2.35\pm0.77\text{mm}$ ($p<0.01$)。

趋化指数: $A=2.09\pm0.55$, $P=2.83\pm0.95$ ($p<0.01$)。

2. 采用墨汁吞噬实验,观察了中性粒细胞吞噬功能。吞噬率: $A=32.5\pm9.22\%$, $P=51.33\pm12.24\%$ ($p<0.01$)。

3. 采用硝基四唑兰(简称NBT)还原试验,观察了中性粒细胞的杀菌功能:NBT阳性率, $A=23.07\pm6.96\%$, $P=40.23\pm10.80\%$, $p<0.001$ 。

4. 淋巴细胞转化率: $A=54.35\pm14.94\%$, $P=64.55\pm10.31\%$, $p<0.01$ 。

5. 用酵母补体花环试验,观察了红细胞的免疫功能,红细胞 C_3b 受体花环率: $A=8.40\pm4.68\%$, $P=12.41\pm3.92\%$, $p<0.001$ 。红细胞免疫复合物花环率: $A=10.95\pm4.86\%$, $P=6.41\pm2.78\%$, $p<0.001$ 。

以上结果表明:(1)自控气功疗法提高中性粒细胞的免疫功能,从而增强机体的防御功能。(2)自控气功疗法提高红细胞的免疫功能,加速对免疫复合物的清除,从而使机体免受免疫复合物的损伤。(3)自控气功疗法可以提高淋巴细胞转化率,从而增强淋巴细胞的抗肿瘤能力。据此,我们认为自控气功疗法是健身治病的良好方法。

2-10 气功配合常规治疗癌症的临床研究

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自 1985 年以来,我们对癌症病人采用化疗、放疗和手术等常规治疗的同时,配合坚持长期气功锻炼,取得了明显的治疗效果。将一组 62 例经细胞学和/或病理学检查确诊并已失去手术和放疗机会的中晚期癌症患者,随机分为气功锻炼配合化疗的治疗组和不进行气功锻炼而只作化疗的对照组。结果气功配合化疗的 32 例治疗组病人,健康分级未下降,部分病人有所提高;白细胞总数大多数稳定或下降不明显;出现食欲不振、恶心、呕吐等消化道反应的人数较少而且反应较轻,未中断化疗的有效病例 29 人,占 92%。无效者 3 人,占 8%。而未进行气功锻炼的 30 例对照组病人,健康分级普遍下降,但尚能坚持治疗未中断化疗者 18 人,占 61%。因健康分级下降明显,或白细胞减少,总数小于 $4 \times 10^9/L$,或消化道反应严重而中断化疗者 12 人,占 39%。两组经统计学处理 $p < 0.05$,有显著性差异。气功锻炼配合化疗治疗癌症还可以提高治愈率,延长病人无瘤生存时间,提高生存质量。目前已有许多实例证明这种效果。例如 1985 年 6 月 26 日收治的一例近于完全梗阻的晚期食管癌患者,入院时主诉进行性吞咽困难三月余,伴噎气、吐粘液、前胸及后背疼痛。X 线食管钡餐透视及造影检查,见食管中段明显狭窄,狭窄部位上方食管扩张呈“杯状”。左前斜位片可见明显的软组织阴影(X 线片号:5238)。内镜活检病理报告发现鳞癌细胞(病理号:85-431)。经气功锻炼配合化疗后,症状及病灶完全消失,可进普食。内镜活检病理检查未发现癌细胞。至今已无瘤生存近 8 年,每年来医院复查,均未发现异常。气功配合其它常规治疗癌症的疗效,我们正在进行系统的研究。

2-11 智能气功治疗 122 例肿瘤疗效分析

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本文总结分析了 122 例肿瘤患者接受智能气功的治疗情况。122 例肿瘤患者中良性肿瘤 71 例,恶性肿瘤 51 例,均已在治疗医院确诊。51 例恶性肿瘤中有 26 例曾在治疗医院经手术或化、放疗,因复发或未能控制病情而求治于智能气功。25 例系确诊后未经其它治疗,仅接受智能气功治疗。

气功治疗 22 天为一疗程。教练捧气贯顶、三心并站桩、循经导引等功法,结合观看带功录像、组场功理授课以及组场调气等,另外对患者分别作针对性调气。

从三个方面比较分析疗效:(1)良性肿瘤与恶性肿瘤;(2)气功治疗长程与短程;(3)中、西

医和气功综合治疗与单纯气功治疗。

疗效数据均经统计学处理。结果提示：(1)智能气功不管对良性或恶性肿瘤，也不论对人体哪部位的肿瘤，都有不同程度的治疗效果；(2)智能气功治疗恶性肿瘤，疗效与治疗时间呈正相关性，即练功时间愈长，疗效愈好；(3)恶性肿瘤综合治疗组与单纯气功治疗组比较，疗效卡方检验 $p > 0.05$ ，无显著性差异；(4)智能气功治疗后随访恶性肿瘤患者 33 例，其中死亡 17 人，除一人外，均无痛苦死亡，提示智能气功在癌症患者的“安乐死”——即少或无痛苦死亡上，将能发挥特殊的功效。

总之，智能气功对肿瘤的治疗效果是肯定的。生者改善生存质量，延长寿命；死者安乐，无或少痛苦死亡。

2—12 气功治疗 30 例癌症临床观察

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我们对 30 例各种癌症应用气功治疗进行了较长期的随访观察。

我们选择 30 例病例分为：手术探查的 10 例（其中 4 例做了根治术，6 例未切除），不管切除与否术后均用气功治疗；选择 10 例均经放疗、化疗、或辅助中药治疗同时，用气功治疗；选择 10 例不能手术、放疗、化疗完全用气功治疗。

气功治疗的方法为两方面。一方面用气功发功（包括信息水、信息处方、超距发功）治疗，另一方面患者坚持自我练功（静功与吸吸呼）。

治疗结果：5 年治愈率（即现存活着）以上者 13 例；转移性肿块明显缩小者 21 例；癌性疼痛减轻或消失者 25 例。

经手术后用气功治疗组，根治术 4 例术后坚持练功均 5 年以上治愈率；经放疗、化疗配合中药组，5 年以上治愈率 5 例，气功治疗对减轻放疗与化疗毒副作用效果明显；不适于手术、放疗、化疗只用气功治疗组，5 年以上治愈率 4 例，并对减轻病痛延长存活时间有明显效果。

气功治癌特点：对减轻或转移患者精神压力，调动患者（内因或潜能）主观能动性有积极作用。教会患者练功，自己掌握了战胜癌症的武器，患者有了主动权，能最大限度的发挥机体潜能，进行自我调整，排除癌魔，使精神压力变为动力。

2—13 中西医、气功三结合治疗癌症 120 例临床影像疗效观察

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本文通过中西医、气功三结合治疗癌症 120 例临床及影像疗效观察，说明：①郭林新气功

治疗癌症功不可没；②中西医、气功三结合治疗癌症效果优于单纯气功治疗或中西医结合治疗；③癌症以中老年男性发病为高，要求对上述病人应合理及时地选用影像学检查，以便早期诊断、早期治疗，同时进行科学的影像学疗效观察极为重要。

2—14 气功加中药治疗老年人晚期胃癌

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本文通过气功加中药治疗老年人晚期胃癌的疗效分析，探讨该疗法治疗晚期癌症的近期疗效，生存质量及免疫生化等所产生的作用。

病例选择为本组 40 例患者均经临床、胃镜、X 线、B 超检查，病理和（或）细胞学确诊。其中男 32 例，女 8 例，男女之比为 4：1，年龄 60～82 岁。

病变部位：贲门癌 26 例，胃体癌 6 例，胃窦癌 8 例。

病理类型：腺癌 18 例，低分化腺癌 12 例，粘液腺癌 6 例，印戒细胞癌 4 例。

研究对象中有已经确诊的胃癌系晚期或年老体弱而失去手术机会者 32 例；根治术后复发者 4 例；化疗无效者 2 例；由于化疗而产生严重反应而不能坚持治疗者 2 例。

治疗方法为治疗组采用气功加中药治疗，所用中药系我们研制的中药抗癌制剂——中药复方胃癌平，用药方法：胃癌平口服，每天 6 次，每次 10ml，4 周为一疗程，可连服 3 个疗程。在 3 个月治疗期间，每天配合气功治疗（功法略）。对照组仅用中药复方胃癌平治疗。

结果如下：

一、主要症状改善情况：两组患者治疗后主要症状改善情况有显著差异（ $p < 0.05$ ）。

二、对患者免疫功能的影响：对照组患者治疗前后免疫指标有所提高，但经统计学处理差异不显著（ $p > 0.05$ ）。治疗组患者治疗前后免疫指标明显提高，经统计学处理，差异非常显著（ $p < 0.01$ ）。

上述结果表明，气功加中药复方胃癌平治疗晚期胃癌，近期疗效较好，有效率达 22.7%，优于近几年国内广泛应用的天仙丸治疗消化道肿瘤的疗效，其有效率仅为 1.2%。

2—15 从脏器的医学到“场”的医学 ——医疗气功 10 年的步伐

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人体由脏器和空间所形成。空间里充满了维生上必要的各种物质、能和信息，从而构成了一种“场”。规定“场”的物理量虽尚未明确，但可预想绝不是“电气”或“磁气”那样单一的东西，

这里管叫做“生命场”吧。

这么说,维持“生命场”秩序的信息,就可说是“气”,而“场”的表现型则是“心”。因此,从医学的取向来说,很明显的,应当有以脏器为对象的,以“气”为对象的和以“心”为对象的三种自不待言。

根据上述构想,这十年来,就癌症来说,已出现了一个把治脏器的西洋医学、调理“气”的中国医学和治心的心理疗法结合起来的整体医学治疗法。

笔者总结一九八二年十一月至一九九三年二月为止,以气功为中心对 1768 个癌症病例进行探讨的结果提出报告。

方法:

在日本现行正统医学——西洋医学以外,另以中医药、针灸、气功和食疗,以及心理疗法中的松弛表象法加以配合。这当中,气功有:放松功、太极拳、郭林新气功等十多种。

结果:

(1)因并用多种方法,故应用统计法进行处理相当困难。现姑就一九九一年一月为止的 505 例单纯统计三年生存率,则得:(A)进度Ⅲ、Ⅳ、103 例 42.7%、(B)晚期 185 例 11.9%。可见已基本收到良好的成果。

(2)前来本院诊疗的癌症患者一九八三年共有 54 例,及至一九九二年骤增到 677 例,其后年年急速增加。这表示:中国医学与心理疗法已受到广泛的关注。

上述两项以外的详细,将通过具体病例加以说明。

总之,气功在治癌方面已扮演着极为重要的角色,人们对气功的认识正逐渐加深之中。

2-16 气功治疗慢性乙型肝炎 75 例临床研究

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一九八九年以来,我们根据“身心同治”的原则,结合中医辨证论治,自拟益肝气功功法,并按照一九九〇年(上海)全国病毒性肝炎学术会议修订的诊断和分型标准,选择慢性乙型肝炎 139 例,随机分为两组。其中 75 例采用气功配合中医辨证治疗,64 例采用单纯中医辨证治疗。其中住院治疗 3 个月以上者共 116 例,2~3 个月者 23 例(不足两个月者均不作为观察病例选入)。各项观察指标每月复查一次,直到出院为止,中药采用协定处方。实验组每天上午及晚上各练功 30 分钟。

结果显示:气功组 HB_sAg 阴转率为 52.6%,对照组为 28.8%, $p < 0.01$;气功组 HB_sAg 阴转率为 73.3%,对照组为 49.2%, $p < 0.01$;气功组 GPT、A/G 复常率以及主要症状改善情况均较对照组为优。提示气功配合中药治疗慢性乙型肝炎的疗效较中药组为优。

2-17 回春功治疗糖尿病Ⅱ型 31 例疗效观察

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从 1986 年至 1990 年, 分两批对 197 例中老年人, 进行了练习回春功一年前后, 延缓衰老的实验研究和临床观察, 对其中 31 例糖尿病Ⅱ型患者单独总结, 结果如下:

1. 体重: 功前 24 例在理想体重范围, 功后无大变化。
2. 空腹血糖(FBS): 功后血糖均值由 $10.19 \pm 3.29 \text{ mmol/L}$ 降至 $6.93 \pm 1.98 \text{ mmol/L}$, $p < 0.001$ 。
3. 血脂: 胆固醇(TC)功后均值由 $6.75 \pm 1.32 \text{ mmol/L}$ 降至 $5.51 \pm 1.16 \text{ mmol/L}$, $p < 0.001$ 。甘油三脂(TG)由 $2.80 \pm 1.01 \text{ mmol/L}$ 降至 $1.34 \pm 0.71 \text{ mmol/L}$, $p < 0.001$ 。
4. 空腹胰岛素定量(IRI): 功后则显示了双向调节作用。均值由 $16.604 \pm 6.005 \text{ MIU/L}$ 降至 $12.62 \pm 14.85 \text{ MIU/L}$, $p < 0.05$, 提示练功可以提高胰岛素的生物效应。
5. 功后, 明显障碍的甲皱微循环显著改善。
6. 提高高密度脂蛋白(HDL-C)的水平, $p < 0.05$ 。
7. 提高载脂蛋白 ApoA-I/ApoB 之比值, $p < 0.001$, 降低 ApoB 之含量, $p < 0.001$ 对消除动脉粥样硬化的有害因素有重要作用。
8. 提高红细胞膜脂区荧光偏振度(P)和降低其膜脂区微粘度(η), $p < 0.001$ 。
9. 临床症状: 体力增强、不易感冒, 饮食控制放宽, 过着较优质的常人生活。

以上结果表明, 练习回春功一年后有对糖尿病人有良好的综合的治疗作用, 其自身对照, 明显优于单纯药物治疗, 对糖尿病易并发的心脑血管病及周围血管病有积极的防治作用, 是治疗Ⅱ型糖尿病有效的非药物治疗的新途径。应大力推广本功法对糖尿病的防治。本文还提出练功时良好的意念和稳定的精神状态, 对机体产生的良性反馈作用, 是促使疾病康复的重要因素, 也是练功不同于一般躯体运动之核心。

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2-18 辨证施治气功偏差综合征 52 例临床分析

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本文收集气功偏差综合征病人 52 例, 通过辨证分析、综合施治, 收到较好的效果。52 例患者中, 男性 34 例, 女性 18 例, 年龄最小 17 岁, 最大者 64 岁, 20~40 岁 36 例, 发病到治疗最短者为 2 天, 最长者为 8 年。临床主要以气血逆乱、气机阻滞、真气走失、气机逆行为辨证依据, 将

52 例分为气乱型 20 例、气滞型 14 例、气泄型 8 例、气逆型 6 例、“入魔”型 4 例。以辨证的观点，采用气功外气、对症点穴按摩、针灸中药、辅助练功等综合方法施治，隔天治疗一次，10 次为一个疗程，一般治疗 1—3 个疗程。治疗结果：单纯用外气导引治疗 14 例，气乱型 9 例、气滞型 4 例、气泄型 1 例，平均疗程 19.5 次，症状完全消失者 7 例，症状减轻者 5 例，无效者 2 例，有效率为 85.7%；外气结合点穴按摩治疗 13 例，病例分布各型均有，平均疗程为 17.8 次，症状全部消失者 8 例，症状减轻者 4 例，无明显效果者 1 例，有效率为 92.3%；外气结合点穴按摩、针灸与中药及辅助练功等综合方法治疗各型病例 25 例，平均疗程 17.6 次，症状全部消失者 16 例，症状减轻 8 例，无效者 1 例，有效率为 96%。

2—19 推拿气功治疗 267 例颈椎病临床分析

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本文自 1989 年以来共诊治 267 例颈椎病，其中男性 86 例，女性 181 例，女性多于男性，好发年龄 30~60 岁，病程 1 天到 30 年，其类型以神经根、椎动脉、混合型为多见。

以手法为主，配合气功经络点穴治疗，显效 248 例，占 92.9%；好转 18 例，占 6.7%；无效 1 例，占 0.37%，平均治疗 15 次，取得较满意效果。

并以手法触诊配合临床症状和体征对颈椎病诊断，补充了传统检查方法的不足。

其发病机理认为与颈椎直接或间接或累积性损伤和退行性改变致颈椎发生解剖位置和生理功能改变而发病。

治疗以“提端旋转复位”为主，配合其它手法及经络点穴，达到松解颈项肌肉痉挛，缓解颈椎垂直轴线上的压力，加大间隙、纠正后关节错位，从而解除神经根、椎动脉、交感神经和脊髓的刺激和压迫，恢复其正常的生理功能和解剖结构。是目前治疗颈椎病较为有效的方法。

2—20 外气手法治疗腰腿痛疗效观察

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医者采用以外气手法为主治疗急性腰肌劳损、腰椎小关节紊乱症，腰椎间盘突出症等腰腿痛 106 例，取得显著效果，现报告如下：

106 例患者中，急性发病者 35 例，慢性 71 例；年龄最大 78 岁，最小 16 岁；病期最长 28 年，最短 2 天。一般治疗 10 次，多者 18 次，少者 3 次。

治疗方法，根据上述疾病的特点，采用外气点穴，拨筋推拿，疏导引伸等综合手法，以整体与局部相结合进行治疗。患者一般每周治疗 2—3 次，每次 15—20 分钟，6 次为一疗程。

治疗结果的总有效率为 90%。

上述治疗手法可解除肌肉疼痛,以调节肌筋膜张力,使得扭错关节复位,筋归槽,达到恢复人体正常组织结构,调节脊柱内外平衡的作用。

2-21 气功抗衰老的临床研究

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我们通过对省属机关的一批离休老干部采用非药物疗法的气功锻炼后,发现练功者除体质普遍增强、临床症状明显改善外,体内红细胞的超氧化物歧化酶活力(简称 SOD)也有很大变化。说明气功锻炼对于治病强身、老年保健、益寿延年确实有明显效果。

我们将 200 名离休人员(男女各 100 名、平均年龄 65 岁)随机抽样分为练功组和对照组,练功组主要修炼峨嵋内功、按摩功、放松功和六步养生功,每日至少坚持练功半小时,最多者坚持练功一年。对照组人员则从未练过功。我们采用微量手指血快速测定法测定红细胞内 SOD 活力。结果发现,练功组中男女组 SOD 平均值分别为:男子组 $2740.85 \pm 602.16 \text{u/gHb}$;女子组 $2718.15 \pm 593.6 \text{u/gHb}$;两组之间无明显差异($p > 0.05$)。而与对照组中男子和女子组的 SOD 平均值相比,(男子组: $1678.18 \pm 484.14 \text{u/gHb}$;女子组: $1704.3 \pm 572.84 \text{u/gHb}$),存在非常显著差异($p < 0.01$)。练功组明显高于未练功组。这显示了气功锻炼能提高人体的 SOD 酶活性。

SOD 是一类有抗氧化作用的高分子生物酶,主要作用于机体内超氧自由基。修炼气功能提高人体血液中的 SOD 活性,从而使机体中具有有一定损害性的超氧化物得到较彻底的清除,从而达到祛邪解毒、抗衰延年的作用。其中的生物机制值得进一步深入研究。

本方法较之其它 SOD 检测法,不需静脉抽血,亦不需特殊设备,简便准确、快速有效。故此方法,可以作为非药物疗法抗衰老的检测指标之一。

2-22 生物全息气功点穴疗法治疗急症的体会

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生物全息气功点穴疗法是将生物全息疗法和气功点穴有机结合起来,用于临床治疗的一种新尝试。其方法是:以人体第二掌骨桡侧和胫骨内侧全息穴位群为主要诊治点,在穴位反应点施以气功点穴,或辅以局部按摩。笔者运用该法治疗中医内外科多种急症 200 例,痊愈 131 例(65.5%),显效 46 例(23%),好转 19 例(9.5%)无效 4 例(2%),总有效率 98%。生物全息诊疗法源于中医的全息思想,其治病机理主要是人体生物场的磁振动效应通过全息穴位点对人体整体的信息反馈调节作用。气功外气具有激发经气,疏通经络,行气活血,调整脏腑气血阴

阳平衡的功能。将生物全息诊疗法与气功点穴疗法结合起来,可大大提高临床疗效,迅速解除病人的痛苦。该法操作简便,不受条件限制,具有一定推广价值。

2-23 气功治疗气滞血瘀型头痛 60 例疗效观察

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60 例患气滞血瘀型头痛患者用气功外气进行治疗,同时让患者自己修练气功功法进行治疗。结果为 42 例(70%)痊愈,10 例显效(17%),8 例好转(13%),总有效率为 100%。病人获得气功外气治疗的次数为 5—30 次,平均 19 次。与同时接受西医常规治疗的 30 例比较,有非常显著的统计学差异($p < 0.01$)。60 例中有 42 例随访观察一年,未复发。因此,认为气功外气加病人自己练功治疗气滞血瘀型头痛,安全、有效,且对身体无害,有利于临床推广应用。

2-24 防近健脑功防治青少年近视疗效的研究总结报告

黄文国

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针对青少年近视发病率逐年趋向增高,严重影响青少年健康与学习,我们以中医理论为基础,重视整体功能的调理,结合局部功能调节,创编了“防近健脑功”。

本功法采用组场放功治疗和教练功法相结合的方法,可使得气快、见效快、疗效好;坚持练功可使疗效巩固,且远期疗效比近期疗效显著提高。我们对小学五、六年级学生连续观察二学期的远期疗效,用对数视力表检查远视力,练功组近视总有效率达 95%,其中治愈率为 48.75%,练功前后视力均值差达 0.34。正常眼视力无一新发视力低下,且大部分都有进一步的提高,练功前后视力均值差达 0.15。要使疗效巩固关键在于坚持每天半小时练功,注意用眼卫生。本功法简单易学,安全可靠。

2-25 空劲气功为主治疗干燥综合征 9 例初步疗效观察

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干燥综合征是一种自身免疫性疾病,近年来发病率有上升趋势。目前,中西医对之均无特效疗法。为了探讨气功对本病的治疗作用,我们于 1992 年 9 月至 12 月,在门诊举办了一期空

劲气功免疫功法学习班,共收治干燥综合征患者 9 例,获得了一定疗效。

一、观察对象 9 例患者全部为女性,具有典型的临床表现和阳性化验结果,且均经腮腺造影和唇腺活检证实,诊断明确。年龄最小 41 岁,最大 67 岁;病程最短 2 年,最长 17 年。参加气功学习班前均已服过益气养阴中药制剂 SS— I 号 4~10 个月,因疗效不满意而加用气功治疗,练功期多数仍继续服 SS— I 号。

二、治疗方法 以空劲气功的免疫功法为主辅以少数穴位自我按摩,患者每天练功 1~2 次,每次约 30 分钟,每周参加集中学习或辅导一次,3 个月学完全套免疫功法

三、疗效标准 分为显效、好转和无效三级,显效:临床主症(口腔干燥、双眼干涩、关节疼痛)有 2 项明显改善甚或基本消失。好转:主症有 2 项改善或一项明显改善。无效:上述主症无改善或加重趋势。

四、治疗结果 练功 3 个月患者临床症状较单独服 SS— I 号时均有不同程度改善,按上述疗效标准获显效 3 例,好转 6 例。3 例显效者中有 2 例已基本恢复正常。另外,部分病例的腮腺肿胀(持续性)、鼻腔干燥、慢性干咳、舌光剥以及龟裂等亦减轻或消失。9 例中有 4 例随访已 4~5 个月,结果 2 例疗效稳定,仍保持显效,另 2 例口眼干燥又进一步改善,由原来的“好转”而提高为“显效”。

五、讨论 干燥综合征属难治疾病之一,近年来各地在应用中医药治疗本病方面虽取得一定成绩,但对有些病例疗效尚不够满意。本文的初步结果表明,运用气功疗法治疗本病确有其独特的疗效,为探索治疗干燥综合征的有效方法提供了一定新途径,值得进一步观察研究,空劲气功具有简便易行,安全而无明显副作用,可在本病患者中推广应用。

2—26 元极功法治疗耳聋的七次试验

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元极功法聋哑学员面授班在北京已试办过 6 期,在天津试办 1 期,均取得可喜成果。7 期面授班 286 名学员中,多数为药物中毒致聋,也有外伤性、神经性、先天性和不明原因突发性耳聋。年龄最小的两岁半,最大的 75 岁。每一期经过 30 多个学时的讲课、教功、治疗和集体练功,电测听的记录表明,大部分学员听力都有不同程度的提高。有效率占测听人数的 40% 以上,其中显效者占测听人数的 11%~14%。生动的事例说明,传统气功对恢复聋哑人的听力是有力量的。要结合实际,编写并不断完善教材,设计出好的教学方法和治疗手段;要有学校、老师的密切配合,辅导学员正确发音、讲话,以巩固提高疗效。对聋哑学员获得听说能力,我们充满了信心。

2—27 运用发射式气功和针灸综合治疗念珠菌病

周 楚

气功康复院 加拿大

念珠菌霉菌病是现代应用抗菌素过多,造成体内的菌群失调,以致霉菌在体内丛生、泛滥,经久不愈,甚至病程长达 25 年以上。据估计 20% 的妇女患有念珠菌病,而且人数还在不断的增加,并且难以治愈。

念珠菌病的临床表现多种多样,中医辨证为:正衰气虚,邪毒湿盛。故取健脾化湿、清热解毒、疏肝理气、扶正祛邪的治则。由于食物过敏,不少病人对某些中药也过敏。为此采用发射式气功和针灸相结合综合治疗病人,取得了较好的疗效。现报道如下:

念珠菌病患者 56 例,女,年龄 18 岁到 65 岁,病程 2—25 年。来我院前均受过各种治疗,效果不佳。治疗方法初期以针灸为主,气功为辅,后阶段以气功为主。针灸取穴(下列二组穴交替使用,随证加减):

1. 足三里(补)、中脘(补)、上巨虚(先泻后补)、气海(补)、腹结(泻)、或照海(补)、心肺点(补)、内关、中极(先泻后补)、三阴交(先泻后补)、水分(泻)、风池(泻)、阳陵(先泻后补)。

2. 脾俞(补)、胃俞(补)、大肠俞(先泻后补)、肺俞(补)、神门、肾俞(补)、次髎(泻)、健脑(补)、肝俞(先泻后补)。

发射式气功治疗:开始采取卧式,身体好转采取坐式或站式。闭眼、安静,然后发射气于上述穴位,同样采取补泻。治疗效果:痊愈:症状消失,无霉菌,32 人,57.14%。显效:症状大为改善,16 人,28.57%。好转:症状有所改善,5 人,8.93%。无效:治疗前后无改变,3 人,5.36%。

针灸和气功之所以能够治好念珠菌病,是因为恢复和加强了经络的调节功能,补充了足够的元气,扶了正,从而祛了邪。

2—28 系列气功反馈磁带的研制与应用

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我们将流传几千年的气功疗法与近 20 年来的西方生物反馈(biofeed-back)技术融为一体以宫廷民族音乐,为背景,研制了中、英、日 10 种气功反馈(Qigonfeed-back)磁带,本文只介绍其中六种。

1. 皮温气功反馈磁带:我们用单片机研制的皮温生物反馈仪,兼听皮温气功反馈磁带训练了 50 名常人组,31 名练功组和 110 名患者均能使劳功穴皮温升高 1—2°C,患者组主要是植物神经功能紊乱的头痛和失眠病人,经一个疗程训练后除皮温升高外,临床症状都得到了缓

解。

2. 血压气功反馈磁带:其 A 面是降压功(低手扶案式)B 面是升压功(高手上托式),用该磁带对 50 人次高血压患者和 70 人次血压偏低者,每日训练一次经 1—2 个疗程后,对 1 期和 2 期高血压和血压偏低者获得了双向性调节作用。

3. 减肥气功反馈磁带:参照张云麟青蛙功等三步功法录制的减肥气功反馈磁带,对 26 名肥胖者每天集中训练一次,10 天后平均体重下降了 5.22kg,并有 80%被试者尿中出现了酮体。

4. 壮阳气功反馈磁带:A 面是强壮功(意念丹田下腹部)B 面是壮阳功(意念命门、会阴部)对 12 名阳萎病人、每天训练一次,三个月后 7 例恢复了勃起功能。并且大部分 HCG 增加。

5. 眼气功操反馈磁带:根据开合功和眼调节功能编制的八节眼气功操,对 458 例近视眼学生观察结果总有效率为 75.6%,并与练功前后脑血流图和眶区皮温有一定依存关系。

6. 老年气功保健音乐:是在背景音乐的基础上,向中老年人的衣、食、住行提供了一些殷切的希望。发现坚持听该磁带的中老年人脑电趋于同步化,HR、BP 和 BMR 均下降,说明人体处于一种类似气功入静的低消耗的最佳功能态。

2—29 用音乐磁带进行气功治疗 ——气功治疗的新发展

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用气功音乐磁带治疗在澳大利亚是较新的事物,越来越多的人开始使用,有的用来祛痛,有的用来安眠。有的磁带是清肝火,很多人自用了带功音乐磁带以后就想自己学气功,这样整个澳大利亚的气功运动出现了新高潮,这也正是我希望的,我的带功音乐胶带有起的作用。我治病不是靠从手发功的,而是靠意念,不受距离的影响,人数也不限,这样我就试着用我自己弹的音乐,让音乐磁带带功,结果很成功,不光自己能感到而且我的学生和病人反映良好,原有严重消沉情绪的病人一周以后就不再用药。这种情况在我指导下用胶带有 21 人,全部有效,其中 15 人很有效,接着我用电子琴自己做曲,自己弹出了一个“清除消沉,恐惧情绪”的胶带,有 532 人用了这胶带进行治疗。还有其它两类磁带,稳定情绪类:“内心的宁静”、“愉快的心情”、“补肾气提高勇气”、“清肝气去怒气”。治疗类:“健肺”、“健心”、“健肝、心、脾和肺”、“复春”、“甜密的睡眠”。至今没有一个人反映磁带没有效。

这种音乐磁带的作用尤如气功师在同一房室内发功一样有效,它的优点是它打破了地点、时间的界限,而又有音乐来加强效果,有的间接从调和情绪,从“神”入手帮助治病,有的直接有对身体明显的作用,如扩肺、安眠。

而气功信息音乐磁带又宣传了气功,扩大了气功影响,现在正计划在国际上介绍,让它在治病,解除人们的精神痛苦方面起更大的作用。

2-30 对 100 名医生在美国用模拟外气治疗的调查

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在美国每月医生给几千例患者用模拟外气仪治病,其效果虽不及报道的中国一流的气功师那么神,但对于各种病人的康复,有一定的意义。对这结果的研究可比较气功师的外气与气功仪的外气的共同点和不同点。

中国电视音响研究所制造的次声气功仪在美国以“Infratonic QGM”的名称出售。与气功师不同,气功仪发出的外气对于各台仪器之间和每次治疗时都相同。这就可以使我们来分析比较许多医生的观察结果,得出气功仪与气功师有何不同,如何更加有效地利用它。下面是对 100 名经常利用气功仪的医生的调查结果。

1. 应用气功仪后病人感觉放松。这支持刘国隆教授发表在第一届国际医学气功学术大会上报告的发现;与外气相似模拟外气使脑电 Alpha 段的功率增加,而 Alpha 波被认为与放松和注意有关。

2. 病人主诉获得了更加清晰有力的思维。气虚和脾虚的病人改善了症状,这支持了气可以传输给病人和气功仪模仿了外气的某一方面的论点。

3. 医生一致报道气功仪使肌肉放松有利于脊椎关节复位,而且这样复位的脊椎关节不易发生再错位。这是肌肉-神经再训练的一个例子,可能与模拟外气促进了神经与大脑的通讯有关。

4. 虽然有许多气功仪可缓和癌症病人疼痛和恶心的报道,但气功仪通常用于治疗其它病症,所以在这方面还不能得出肯定的结论。冯理达教授的模拟外气治疗小鼠白血病的报道(第一届国际医学气功学术大会),在临床应用的研究中未能得到证实。

5. 慢性疲劳和普通感染的病人对气功仪的治疗反应良好,支持这种气功仪的发明者 Lu Yan Fang 医生的结果,经气功仪处理的兔子所产生的抗体量比对照组高数倍。

综上所述,虽然气功仪的效果不及报道的中国有名的气功师,但美国缺少气功师,大部分美国人只能得到气功仪的治疗。气功仪的第二个缺点是没有诊断功能。气功师常常可以因病施治,而气功仪只是一个工具。尽管如此,在美国培养出大量气功医师之前,病人不得不依赖气功仪。

2-31 “触气功法”治疗‘闪腰’(急性腰扭伤)一考察

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西洋医学中没有‘闪腰’这一病名。在日本被叫作‘Gikkulikuoxi’。这种腰病的疼痛机理至今尚不清楚、通常被认为、椎间盘在椎骨之间被过度挤压、纤维环损伤、髓核脱出、机械性地压迫腰骶部的神经根、脱出的髓核成分接触血流、产生自我免疫反应、疼痛是由机械性压迫和自我免疫反应两方面所造成。

运用日本的“武术气活”(即中国的气功法)、引导人体的自然治愈力、将‘闪腰’的疼痛在一分钟至三分钟内解除、是本文所要论述的疗法。

首先、确诊患者的‘闪腰’部位、让患者仰卧、在胸上两侧的“中府穴”附近、运用“触气功”将气注入(类似“按摩点穴”气功)。其次、在两膝关节的内侧上部的“血海穴”附近、将气注入。牵引二次或三次。随后让患者俯卧、在背部施调整、扩散气功、将触气功所发、集中在腰部中心并滞留于外腹斜肌和腰背肌膜的触气、扩散于全身、特别是腰、胸、颈处、引起该部及全身肌肉的活动。肌肉紧张的缓和、椎骨和脊椎能自由前、后屈活动、椎间盘得以回复原有的状态、消除了对神经根的压迫、疼痛也随之解消。

施术结果:全症例(2000例)中的70%经1-3回施术治愈。15%经数回施术治愈。5%症状改善。5%症状改善不太明显。5%不明(由于中途停止来院)。在这些所处理症例中、经本疗法症状得到改善的占90%。特别是初次‘闪腰’的患者、几乎所有的症例都得到了改善。来治疗腰病的患者中、不少人同时主诉膝、肩以及颈部疼痛。在行腰部施术后、经全身气功整体、90%的症状得到治愈和改善。

该疗法只使用‘触气功’(即日本所说的“气活”)。使用‘外气功’是非常困难的、不容易充分注意注入患者体内的气的运行、进行牵引往往会造成事故。

‘触气功’和‘外气功’之不同、是否可以认为表现在对患者肌肉刺激的方法以及将这种刺激进行到何种程度这一点上。

2-32 慢性软组织损伤对气功治疗的反应

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我们报道的是一例30岁已婚妇女,在办公室工作,爱运动。她主诉右侧大腿疼痛,运动时加剧。X-线平片检查无异常发现。由于外伤史并经核磁共振检测排除恶性病变,抗炎治疗无效。第一次气功治疗受伤部位10分钟,她主诉患部有热的感觉并向下扩散,疼痛减轻,现继续

治疗,症状继续好转。

2—33 气功护理学基础

小松宽志

日本

现代医学的发达,延长了人们的平均寿命,但日常的变态反应,抑郁症等,使许多人感到痛苦。我从精神科护理的经验想到人是怎样被治愈的,以中国医学的气功疗法和心理学为基础,通过与针灸,指压,整体疗法的治疗技术交流,摸索传统医疗与现代医学的结合,预防医学。气功锻炼,通过自身的力量,可以改善体内的气血循环,造就一个健康的身心。迎接高龄化社会,越来越积极地努力改进健康,预防疾病,自己保护自身的健康很重要。可以说气功的确是未来时代的最合适的健康法。

实际操作:静功(放松功;立式),动功(六方向的基本式;左右、上下前后。效果拔群,三个甩的动作)。初学时不要紧张,气感有个体差异,练功时速度、时间、次数根据自己的身体而定,不要考虑做法对错,以快而不快的标准来练习。

气功的理论是中医学的精华(人是宇宙的缩影),是从分子至宇宙的一个总合体,重视人同自然的密切关系。气堵气乱是疾病的原因。所谓气功的气是人的根本之能量,功是锻炼的意思。用自己的力量能恢复健康,克服紧张的精神状态,作用持久是气功的特点。而且气功没有副作用,不需费用,不要器具,不要场地,没有年龄、性别的限制,随时随地可以做,动作优美。

对于护理人员要建立同患者的关系,理解患者。开始做时,重要的是护理人员要经常保持精神安定,注意自己内心的波动,控制住是必要的。气功一定是在忘我的时候,在精神方面得到提高。只要给他人爱、同情、从“治疗的关系”中能得到力量。实践“多给予爱”体验自己有存在的价值。

3. 气功的传统理论研究

3-1 中国内丹学的理和法

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中国气功学的体系博大精深, 以内丹术集其大成。自东汉魏伯阳的《周易参同契》奠定了中国内丹学的理论体系以来, 历代丹家以自己的身体为丹炉, 进行了大量生理炼丹实验, 逐渐摸索到了一套系统的生命(身心)双修功夫。其程序之严谨、实证之细微、文献之浩瀚、理论至深至简, 使它在现代实证科学面前毫不逊色, 堪称一门以大量人体实验为基础的、严肃的生命科学。本文从内炼精、气、神的原理和程序两方面入手, 分析研究了中国内丹学的学术体系, 提出中国内丹学是严肃的生命科学。

关于内丹修炼的原理, 本文提出以下二点:

1. 取坎填离逆阴阳之化

中医学内为: “顺阴阳则生, 逆阴阳则死”。而内丹学认为: “顺之有死, 皆逆死”, 指出如欲逆转生长壮老已的生命运动之序, 需从逆转阴阳二气的运动变化入手。对此, 丹家以取坎填离的手段实现。所谓取坎填离, 即是促使人体生殖之精中的元阳物质与神经中枢中的元阴物质互相置换, 使人体生殖系统和神经系统均返回到成胎之初的原始状态, 从而使生命得到再造, 衰老得到逆转。

2. 以至虚之道逆转阴阳

如何取坎填离、逆转人体阴阳生化之序呢? 在这一问题上, 中国内丹学强调: 人类的意识、理论、及种种作为, 不仅无济于事, 而且是主要障碍。人们所能做的, 就是什么也不要想、不要作, 完全进入至静至虚的无意识的状态, 让生命自然发挥固有的阴阳顺化与逆化互相转化的周期性振荡。所谓“道法自然”是也。

对内丹修炼程序, 文章做了扼要归纳说明。

第一阶段: 炼己筑基。通过不断地纯净意识, 使大脑进入高度有序、相干的功能状态。在这一状态下, 玄关窍开, 大脑辉光, 人体至静至虚, 形气转化出现高频振荡。

第二阶段: 炼精化气, 行子午周天。在大脑辉光的内照和呼吸之气的调节下, 生殖之精气化, 沿督脉上升入补脑, 使大脑辉光增强, 进一步下照生殖之精, 使之气化补脑, 形成生殖系统和中枢神经系统上下沟通, 相互作用的正反馈机制。这一阶段的功成标志是三花聚顶、马阴藏相。

第三阶段: 炼气合神, 行卯酉周天。在大脑辉光的内照和呼吸之气的调节下, 进一步将生殖之精所化元气, 导引至五脏之间, 使五脏之精亦产生还原性变化, 使真气进一步充满上中下三

焦。这一阶段功成的标志,是大脑辉光聚成丹苗,而后结成金丹。

第四阶段:大定蛰藏,生命再造,行大周天。此阶段是从金丹入于腹中气穴引发的。金丹进入真气穴后,人体六脉皆住,外呼吸停止,内呼吸活跃,如蛹虫在蛰藏下蜕变,体内发生重造生命的剧烈变化,元精、元气、元神在下丹田化合成内丹——生命再造的种子。内丹在大脑金丹的辉照下,经河车运转进入大脑泥丸,实现神与气合。而后化为甘露经口进入下丹田,形成金液还丹。大周天实为内丹在人体上下丹之间的周天变化。这一阶段,人体无意识,无呼吸,全凭元神主宰,阴阳自化,毫无方法、火候可言。经历大周天后,人体将成为有别于一般个体的新人、“真人”,在智能和寿命上,大大超越现实的人类。

中国内丹术的每一阶段修炼,都伴随着显著的人体生理变化,均有内景、外象可证。因此,中国内丹学绝不是以玄学,而是以人体内炼实验为基础的严肃的生命科学。

3—2 中华传统气功的易学原理

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中华传统气功是中华民族养生保健、祛病延年的重要方法之一,与针灸学、中医学等共同组成了具有中华民族特色的传统医学。因其在形成和发展的过程中受易学影响最大,故本文仅就其易学原理进行了初步探讨,总结为“太极阴阳系统论”、“八卦象数消息论”、“河洛数理气化论”。

太极阴阳系统论指出,太极为宇宙万物之本原,阴阳两仪乃变化之本。太极是宇宙的整体,天地万物是这一大整体系统中各级别、各层次的小系统,各小系统的太极运动,虽都有独自的展现形式,但都存在太极之全息而具有系统结构。先贤将其应用于生命科学中,形成了“天人合一整体观”、“阴阳变化恒动观”、“人体脏象系统观”等重要理论,受易学影响最大的传统气功,更是以“太极”为修炼之指南。

八卦象数消息论指出,八卦统括天地万物,阐发太极之理。卦爻的象数变化,反映着阴阳消长进退的量变——质变过程,因此象数变化之阴阳消息,可示天地万物变化之道,中医学之阴阳五行学说源通于此。脏象、病机、治则治法、针灸、方药、推拿按摩中,也到处可见八卦象数消息论之踪迹。因八卦象数道家尤为推崇,故成为传统道家气功的理论基础及功理功法的表述语言。

河洛数理气化论指出,河图、洛书的数字排列内蕴天地变化之奥理,河洛数理反映了天地万物气化运动的基本规律。河图为体,洛书为用,河图主全,洛书主变。河洛二数相辅相成,合之则明天地万物阴阳之变、五行生克制化之理。河洛数理与人体生命之间存在着密切的关系,广泛的运用于《内经》的运气学说及针灸的“子午流注”、“灵龟八法”等。而传统气功更是依数而行,使人身气化有节有度合于数理。

太极阴阳系统论、八卦象数消息论、河洛数理气化论,三者相辅相成,共同构成了中华传统气功易学原理的三大支柱。

3-3 《杂病源流犀烛》古气功发掘

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该书成书于清代乾隆 38 年(1773 年), 作者沈金鳌学有渊源、笃志博闻, 不限于一派一系, 对气功疗法也颇有研究。他认为养生家修炼的导引、运功, 虽然是为了长生, 但都属却病之法, 可辅助药物治疗药物难以治愈的疾病, 这既肯定了气功疗法的独特作用, 又没有夸大为万能的, 是很客观的评价。该书卷首罗列有“归元”、“周天”、“艮背”、“行庭”、“通关”、“缘法”、“涤秽”等七种总法和“运规十二则”。在四十六种病症之后, 又载录了不同的导引和运功方法。其内容从五脏六腑杂症, 到耳目口齿等身形疾患, 从风、癆、臌、膈四大疑难症, 到头痛、腹泻等常见小病, 这些正是当前气功界研究辨证施功课题所要努力发掘的古代功法。

现在流行功法大多用于慢性病康复, 感冒发烧这类急性病很少用气功疗法, 该书“感冒源流”中介绍了“伤风导引法”: 1. 双手搓热, 按摩风府 100 次; 2. 入静, 两手交叉, 紧抱风府, 向前拜揖 100 次, 使微出汗, 勿见风; 3. 气沉丹田, 意守入静 20 分钟左右。暂缓进食。这是针对初受风寒、恶风、无汗等症的功法。若是邪正相争激烈而发热时, 则用运肾水退热止痛法: 1. 守“艮背”: 意守脊背督脉十四椎下命门穴; 2. 入静后运“行庭”: 周通督任二脉的小周天功法, 行气至风府穴, 用意回旋 100 圈, 再直上入头顶内, 也旋转 100 圈, 后分两路旋入眼胞, 渐入瞳人旋 100 圈, 至鼻梁合行旋入深处, 多旋一会儿, 接上鹊桥(舌抵上腭), 经重楼(气管), 行胸腹, 止于下丹田, 意守入静; 3. 以手指在额头向两边分摩, 直达耳根, 并以指甲掐头痛处。可治疗头疼目胀, 腰背膝酸痛, 发热等。

在“肿胀源流”中介绍了“臌胀导引”, 这是相当肝硬化的难治疾病, 其宗旨是使气机畅通: 1. 以手摩擦足心及迎香穴, 并摩运脐部; 2. 用小周天功法运气 49 遍。这些功法都是经过现代气功临床实践证明确有疗效的。

由于古文简奥, 无插图参考, 故此项发掘已作为科研课题, 重新设计功法动作, 拍成幻灯片和录相, 并经临床验证才能推广应用。

3-4 气功是中医的一门重要分支学科

——从《诸病源候论》导引法研究中获得的启示

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本文从十年来对隋代著名医籍《诸病源候论》导引法的研究中, 提出当前医学气功发展的重要问题和解决方法。

气功是应人民防治疾病和养生的需要而产生的, 在中医学中导源甚早, 对中医学术的发展

作出过重要贡献,到隋代已达中医分支学科水平,为何以后未充分发展,至今仍未获中医界的普遍支持和卫生行政部门的正式承认?

作了简短历史回顾后,本文着重通过《诸病源候论》分析了到隋代时医学气功达到的水平和存在的问题。

第一、该书是继《内经》后的重要中医理论和证候分类专著,未涉及方药、针灸等而对导引法却作了丰富而系统的辑录,充分说明气功在当时医学中的地位和作者对此的重视。

第二、书中共载 213 种导引法,用以治疗 113 种病候,范围及于内、外、妇、儿、传染、寄生虫、眼、耳鼻喉、口腔、皮肤等科,这就充分说明,医学气功在隋以前已有长期,广泛的医疗实践。

第三、在学术上,该书不仅包括了今天气功的调神、调息、调身等全部内容,还有丰富的行气运用。且三调内容极其丰富。

第四、在治疗中,该书充分体现中医“辨证施治”的优良传统。

上述事实充分说明气功到隋代已达到分支学科水平。我们在初步临床运用中也获得了十分令人鼓舞的疗效。

存在问题是:(一)绝大多数功法无名称,极大地影响其应用、继承和总结交流。对此,笔者等曾在《古代气功治病法》一书中作了命名工作。

(二)缺乏有医学素养、熟练掌握其丰富功法,能进行辨证施功的继承力量,这是关键所在,也是当前造成管理困难的主要原因。建议举办《诸病源候论》导引法研修班,通过一年学习,掌握全书功法,探索其辨证施功机理,培养一批继承骨干,再作临床验证、推广、总结。这是恢复气功在医学中的分支学科地位,解决对医学气功人员管理困难的重要措施。笔者愿为此竭尽全力,并愿与有志于此者合作。

3—5 玄关与玄关效应

王松龄气功养生法延缓衰老效应与机理的研究

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“玄关”,或称“玄关窍”、“玄牝门”,按道家炼养派传统观点认为,只有修玄关才是“正道”,一旦玄关得手,则丹基已立,向上修持自可头头是道。因此,练气功者都希望能开玄关。开玄关,佛家亦称“开悟”。为练功过程中达到的一种高级境界。在此境界中,生理和病理过程同时发生逆转,所患疾病立时痊愈,生理机能“返老还童”,并可激发出人体的潜在本能。

对玄关的修炼方法、境界和效应,各家论述不一,金山人闵一得在《道藏续编》里对玄关之理、法、境界反复阐述,极尽精微,直指开玄关之法在一“忘”字,即“忘而又忘,玄关斯辟”。修炼“王松龄气功养生法”较容易入忘,进而可以获得玄关窍开之景,其中有上玄关(性功玄关)窍开、下玄关(命功玄关)窍开,和上、下齐开的情况(列举 7 例)。本方法偏重于性功修炼,所以多见于性功玄关窍开之景。观察发现,照此法修炼每天达 4 至 6 小时,坚持 1 至 3 个月以上者,约有 10% 的人可以获得玄关效应。关于开玄关的境界,由于个体差异,反应不同,但多有共同表现,可概括为:“忘、停、炸、光、通、返”六字。即先入忘、呼吸停止、脑内发生爆炸感,同时有灵光

显现,周身经脉齐通,生理上返老还童。

玄关之开与不开,主要因素有三:1. 方法正确与否;2. 个体素质差异;3. 练功所付出的努力程度。修炼道家气功达到玄关窍开境界之后,疾病痊愈,“返老还童”,从开玄关后各项临床和生理指标变化情况充分证明了这一现实。这种变化是练功过程中体内能量不断积累,达到精气足时的一种由量变到质变的过程。当气机发动上冲入脑时,使大脑能量显著增高,中枢神经系统进入高度协调和有序化状态。这时有利于人体先天本能发挥作用,不但有自我修复作用,而且可使生理和病理过程发生本质的逆转,同时心理过程亦发生了变化。这就是开玄关后不但疾病痊愈,而且有“还童”效应的道理。

3-6 东方悟学与上元归根法

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本文提出了气功的新理论和新方法。新的理论和方法是从现代深层心理学的角度对中国传统气功及其相关的道教、佛教深入研究的结果。

人自有生以来,都要经历许许多多的事件,每个事件都会形成一个信息团,称为“根结”,储存于人体之中。人的根就是由无数这样的根结构成的。“根结”的概念要比弗洛伊德的“情结”深广得多。因为根结不仅来自个人的一生,而且来自父母、来自先祖、以至贯穿人类进化历史的每一个台阶。气功实践可以证明这一点。

每个人根里的众多根结当中,都存在许多未曾理顺的关系,因此影响个人人格的发展和自我完善。中国先人早在数千年前就发现了如何理顺根结的方法,从而发掘潜能,完善自我。这个方法就是气功。

气功是顺应了人的一种本能,就是归根的本能。归根就是向着生命本源和宇宙本源的归复。人类普遍存在着一种归根意识,它是潜在的,也是强大的。归根意识需要表达,归根意识表达的过程就是理顺根结的过程。巫术和宗教是人类归根意识表达的原始方式,而气功则是由原始到现代的过渡方式。从本质上讲,气功旨在帮助人们排除对归根本能的干扰,这干扰来自人们意识发展中所形成的种种观念。当人们达到观念上的彻底超越,这便是“悟”。悟是人类最高体验,是根结的通盘理顺,是人体潜能的全面开发。所以,气功是关于“悟”的学问,可以称为“东方悟学”。

上元归根法,是从中国道家和佛家气功中提炼出来的一些原理和技术,帮助人们更有效地归根求悟,开发潜能,完善人格,造福社会。所以,上元归根法也可视为“人格重建工程”。

3—7 气功音乐治疗理论的探索

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在音乐治疗中有一般性音乐治疗与特性音乐治疗。

特性音乐治疗,在综合音乐疗法构型中,属于音乐气功综合疗法,音乐意识能综合疗法的概念归纳。在特异心理疗法中,属于音声默念疗法,手印经咒疗法以及信仰祈祷疗法的实践指归。这种疗法的本质,是“以气为观”、“以声为能”、“以意为导”,以患者为中心的体现生理与心理的全息对应,实践完全随机医学思维方式的心身合一、医患合一的新型医学模式。

特性音乐治疗,可以帮助患者挖掘潜能,促进患者自行了解,在治疗实践中获得较大的满足,在音乐、语言、心声与情感体验中,使人格情绪与心态向着健康的方向演化与发展从而战胜疾病。

特性音乐治疗与一般音乐治疗的学术研究与临床实施,体现了现代医学模式的扩展、深入与转移。一般性音乐治疗是运用音乐这一特殊的艺术手段,通过听觉系统作用于大脑各级中枢,达到良好的身心调节效果。在治疗方法选择上:可采用单独聆听法,群体聆听法,音像视听法以及行为参与法。在音乐处方选择上:根据不同的文化层次,不同的知识趋求,不同的欣赏爱好,不同的宗教信仰而进行灵活选取,依据不同的疾病、体质的强弱,性格的动静而临证化裁,选取相应的治法,为安神镇静法,宣悲解郁法、养心益智法、兴奋畅志法、养生益寿法、构成心身共鸣,构成最良好的音乐美感禅悟。达到相应的疗效,达到延年益寿的目的。

音乐,不但具有物理学特征,生理学特征与一般心理学特征,而且具有超心理学属性,也就是说音乐既具有有形有相的显型属性,亦具有无形无相的隐型属性。特性音乐治疗,就是将上述两种属性,进行古代前沿学术理论的挖掘与当代后继医疗实践的运用,旨在深入与拓宽医学气功探索与人体科学探索的科研领域。

在现代音乐治疗的发展过程中,业已发现人本身就富有一种特殊的声音,对人的这种特殊声音的认识和把握,并用于当今医学实践,是进行音乐治疗学术研究的关键。古代巫术文化中音歌舞疗法得以治疗疾病并产生良好的群体效应,具有不可估量的学术价值。对古代巫文化中的医疗手段进行复苏及探研,是现代音乐治疗中极其重要的开发原则。特性音乐治疗,就是将古代东西方养生文化,进行整合并付之于当代的养生治疗实践。如道家的六字气诀疗法,庄子听息法、老子《道德经》音声相和法;儒家的正襟危坐孔门心法、心斋坐忘法;医家的《灵枢·经别》五音脏象法;佛家的三声默念法,六声默念法。六字默念法,八音生慧法;佛道共具的手印经咒疗法;西方神学中的信仰祈祷疗法,都蕴藏潜在的音乐心身效应的巨大能量。

特性音乐治疗的特色,是“以气为观”吸收气功中心身感应与意识观照;“以声为能”揉合佛、道、儒的养生精髓;“以意为导”采纳医家经络学说中的督升任降。法无定法,一得而万化。东西方文化无论是宏观还是微观,都是属于人类文化这个整体。探索音乐治疗理论与实践发想后的结论:它是融合东西方养生文化应用于医学探研进行跨学科综合研究的结晶、瑰宝和万花

简。

3—8 中国传统周天功功态层次和判断的探讨

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中国传统周天功已有二千多年历史,并广泛应用于却病延年的医学领域。当前研究的一个突出问题是功态层次划分和判断若明若暗。由于尚没有形成现代科学手段的检测系统,仅停留在以古代典籍描述的隐喻类比和自我体察为依据的唯系阶段,且多分散,重复,割裂,缺乏系统性科学性。因而难以与现代科学理论相衔接,影响功法的现代传播和往往造成混乱。作者基于周天功的核心和内涵是以人体内气循环运动作为人体生命动力和源泉以及生命的基本特征的观点,提示以内气产生和沟通任督二脉循环运动的进程作为功态划分和判断的标准。并以作者研习的“周天命门功”功态五个层次,九个阶段的划分和判断作具体的讨论。其主要内容为:第一层次第1阶段:内气萌动—体感出现动痒、轻重,冷暖等“八触”为征候。第二层次第2阶段:丹田暖融—内气氤氲聚化,下丹田(或命门)处有热感,和暖融融为征候,第三层次,心肾相交,其中第3阶段:玄关窍开—心肾之间有持续跳动感为征候,第4阶段:真种产生—心气和肾气相抱相合,形成真种为征候。第四层次,周天运转(小周天):第5阶段:河车初运—内气一撞三关,和合神水(头部激发的内气)下降十二重楼(气管)至中丹田为征候。第6阶段:河车运转—内气循任督二脉周流不息为征候。第五层次,炼气化神(大周天):第7阶段:玄珠兆露—天门洞开,自采宇宙太和之气;外阴自缩,还精补脑而不漏,“形为弹丸,色同朱桔”的金丹结就为征候。第8阶段:婴儿始现—毛窍齐开,气气相通,万脉归一,息无脉绝,自有阴神出现为征候。第9阶段:阳神出现—神完自有光现(白光或金光),顶际出现白光如轮,阳神收放自如为征候。并讨论了各阶段功法中相应的意守和呼吸方法。中国传统周天功锻炼全过程功态划分和判断的提出是传统功法和现代科学相结合的一个大胆尝试,尽管需要不断实践,探讨,完善(包括许多一时难以诠释的术语),但仍有以下几个特色。第一,体现了传统周天功的基本内容,打破了过去对气功的认识局限于小生产炉火冶炼的水平所导致的旧框架,形成了一个较为完整的功法体系。第二,有助于从现代科学的角度来更深刻地认识人类本身和气功科学,因为无论从现代控制论系统论,还是从中医整体观来看,以人体内气循环模式为基础的气功理论和功态判断方法都可以从中得到体现和印证。同时,从超微观水平上为现代医学和传统医学提供了新的研究方向。第三,有利于正本清源,扫除所谓“快速周天法”等谬误,使修炼者精进有序,促进传统周天功的健康发展。

3—9 当代中国医学气功发展方向之探讨

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近几年来,我们对引起气功偏差原因的实质及发病机制并对今后医学气功如何发展在临床作了一些探讨。自1987年以来我们共接待了200例气功出偏的病人。结果发现尽管气功出偏的原因多种多样,但大多有一个共同的特点即练功者对“调神”与“调气”的错误理解与应用。

我们知道,气功之神有“元神”与“识神”之分,气有清气(正气),浊气(致病之气)之别。练功的过程实际上是从“识神”向“元神”,“浊气”向“清气”转变的过程。而这个转变的过程是有一定的程序的,也就是同常练功人所讲的“筑基”过程。我们认为筑基实际上是用“识神”清除体内“浊气”的过程。在没有用识神清除浊气以前既用识神意守丹田或其它部位,经过一段的时间锻炼后,体内这样用“识神”意守丹田所得之气是一种清浊不分的混浊之气,而且这种气在体内具有非常不稳态性。一旦练功者遇到诸如惊吓、生气等外界因素以及“练功者内心着急”,“练功者随意以意引气”,“练功意守过重”,“练功者有家族精神病史或练功以前患有精神病史者”等等因素的影响。体内的这种不稳态的气机就易出现气功紊乱状态。假如这种气沿督脉上升到头,严重可致各种类型的精神病,轻者可致泰山压顶等症状。如果这种气循出脉外就会出现“气乱妄行”“全身麻胀或刺痒”“二阴漏气”等等,那么如何才能使“浊气”向“清气”“识神”向“元神”这个转变过程顺利进行呢?我们依据先辈们的传授及临床经验,在临床上选用新的医学气功体系取得满意的效果,现将新的医学气功体系简介如下:

古人认为:人是一个以五脏为中心,隶属于五脏的经络为网络,以“精”“气”“神”为人的最基本和最宝贵的物质构成的一个多层次的有机的整体。人的健康实际上就是五脏之间的相对的平衡。因此无论什么门派,什么功法,只要构成医学气功,那么它的主要任务主要是协调五脏,疏通经络,培养“精、气、神”。为了保证这个调理顺利进行,练功者必须有一个清除浊气,培补元气的过程,即筑基的过程。

3—10 气功修身——六十年的体会和认识

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作者文中论述了气功修身的目的,在于身心俱健。一个人的身与心是矛盾的两个方面,养身在动,养心在静,动静相合为最佳境界。一般常人多是动大于静,阳常有余,阴常不足,气功修身则偏于滋阴平阳。

传统的气功理论,涵盖两个层次,低层次偏于健身,祛病、延寿,属于医疗保健的范畴;高层次则偏于发展人的认识能力,开发智慧,属于认识科学的范畴。

作者从事气功修行六十余年,将多年的体会和认识也做了阐述,共做切磋。

3—11 脏腑导引功法述略

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本文从文献学的角度,对古代脏腑疾病的气功疗法及脏腑气功修养的方法进行了较为系统,全面的整理。内容主要包括:1. 不同的脏腑应施以不同的气功方法;2. 同一脏腑的气功锻炼方法均要与四时、方位、五色相适应;3. 同一脏腑,同其寒热虚实证候的不同,气功疗法也不同。本论文介绍了五脏导引法,五脏修养法、六字气诀等七种历代较有影响的脏腑导引功法,目的在于能为今后开展辨证施功的研究提供可资借鉴的思路和方法。

1. Basic Research and Experiment

1-1 META-SYNTHETIC INVESTIGATION INTO HUMAN SOMATIC EIGENSTATES

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1. In order to establish a scientific method for evaluating human somatic eigenstates and to create a new way for deeply developing qigong researches and popularizing the application of qigong, meta-synthetic investigations were carried out on the integral physiological functional basis of the open complex giant system of the human body, under the direction of theories of systems science, synergetics and human-somatic science, on the basis of principles of integration, correlation, dynamics and orderization.

2. One thousand four hundred and eight tests were performed on 202 healthy subjects under waking, sleeping, working, qigong and bed-rest states or loading conditions. Multi-systems and multi-physiological and biochemical parameters were observed and recorded on the tape recorder synchronously and continuously in each test.

3. On the basis of numerous observed data, necessary preliminary processings were performed for each parameter to condense data and to stress the system's characteristics. A series of macroscopic, complex, multi-level and multi-variate analysis were applied.

4. The results showed that:

(1) Seldom (2-3) independent, unrelated comprehensive parameters by which a lot of information was provided, were able to substitute the numerous observed original parameters to decrease the dimensions of the system's phasic space. A new system's phasic space only with 2-3 dimensions was formed by these comprehensive parameters.

(2) The physiological functional states of the whole somatic system were able to be described with one physiological functional state point in his own system's phasic space. The locations, shift in directions and distances, moving traces, oscillations and fluctuations of physiological functional state points in the system's phasic space and the physiological meaning reflected with comprehensive parameters were used to express the subject's situated physiological functional state, and the dynamic characteristics, system's constructive characteristics and physiological meaning during the self-adaptation and self-organization directly and concisely.

(3) Multi-variable discrimination was used for diagnosis if the whole somatic system was

under certain eigenstate or not.

5. A set of new established meta-synthetic methods was able to evaluate objectively and quantitatively the human somatic giant system situation of physiological functional state; under certain eigenstate or not; transforming process among various eigenstates; quality of regulation and levels of adaptation.

6. The whole set of these methods existed either with the scientific theoretic basis, or with strict mathematic derivations, further with real physiological significances. It is able to be used in investigation into and application of qigong.

1 — 2

DYNAMIC CHARACTERISTICS OF PHYSIOLOGICAL CHANGES UNDER THE QIGONG STATE

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Ninety-six students in the Qigong College were taken as subjects. They have practised qigong exercises for 2—3 years. It was the qigong group. The control group consisted of fifteen young men who had not practised qigong exercises. Skin resistance and skin microvibration signals at Yintang (Extra), Shanzhong (Ren 17), Qihai (Ren 6) and right Laogong (P 8) were simultaneously and continuously measured before and under the qigong state. Subjects were sitting quietly with eyes closed for 10 min before qigong exercises, then their mind should be concentrated on their own Qihai (Ren 6) for 10 min, then on their right Laogong (P 8) for 3 min. The control test was similar to the qigong test. The change values (%/min) of the skin resistance at the main points (on which subjects' mind should be concentrated) decreased, showing excitation, while that of the rest points (on which subjects' mind should not be concentrated) increased or changed little, showing relative inhibition under the qigong state, when the qigong group was compared with the control group. The difference between the main points and other points of the qigong group and control group were significant statistically. The results showed that integral excitation was up under the qigong state through the following ways: main points excited, other points inhibited, main points excited, other points also excited, but the value of excitation of the main points was higher than that of the other points; main points inhibited, other points also inhibited, but the value of inhibition of the other points was higher than the main points, then the main points were still excited in contrast to the other points. Under mind concentration, integral physiological changes were that dominance in the main points caves (relative to other points) was developed in dynamic process. It may be called as the "dynamic dominant law".

Skin microvibration is a low frequency muscular vibration. It was different from pulse wave. The main peak of microvibration wave was seen significantly at above 3 Hz on frequency spectral analysis graph. The results showed that the percentage of microvibration

present was 49.0 ± 6.4 (%) in the qigong group, while that was 16.7 ± 8.3 (%) in the control group, the difference between them was significant statistically. The amplitudes of microvibration waves on the main points increased, while that on other points decreased or changed slightly. It showed that there was dynamic dominance on the main points relatively.

Microvibration and infrasonic sound on Laogong(P 8) were measured simultaneously in a sound insulation room. It was seen clearly that infrasonic sound signals were different from interference signals on frequency spectral graph. It was found that the percentage of infrasonic sound present was 78.1% in the qigong group, while that of the control group was 40.0%. The positive medium relation between the infrasonic sound and microvibration was part sound resource of the external body infrasonic sound. Under the qigong state, amplitudes of the infrasonic sound increased significantly, and there were also dynamic dominant characteristics.

1-3 ON HEALTH CONSIDERATIONS TO PROPOSE A MODEL DETERMINED BY MODERN CHEMICO-PHYSICAL BASIS TO UNIFICATE THE ABIOTIC WITH THE BIOLOGICAL WORLD

Antonio Dorigo(1)

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Our proposition presents a synthesis of many aspects more significant of biophysics with the scope of connecting the millenarian tradition of Chinese knowledge of medicine of the holistic man, with physical and chemical models that are on the basis of modern research of the phenomenon "life".

The symmetry breaking caused by constraints imposition to a physical system, push it into a evolutive story toward the initial equilibrium-condition that is the universal, final attractor, the state of maximum of entropy. This attraction obliges the system to self-canalize into a direction of chaotic regimen or a direction of steady flow regimen.

Life, expression of maximal structural asymmetry and functional order, emerges and

maintains itself at the border between order and chaos.

The living being appears as a highly complex self-organizing chemical system provided by program, and attractor in the phase space, and orbitation of dynamic regimens of energy exchanges and of chemical transformations, that maintain itself, constructing its proper order and dynamic stability with the function of feed-back intervention and modification of the surroundings after a personal history of interactions. The self-ordering structures and the functional rhythms are maintained alive from the continual flow, incessant exchange of information particles; this is the "glue" that maintains the dynamic linkage of life in the living beings.

The individual cells in the human organism work cooperatively organized coupled from communication mechanisms and at-distance correlations mediated from coupling structures; dynamical networks, patterns, functional designs, configurations that are conformed with interferential modality.

Human organism is an organically working superposition of all these networks, all these patterns, intercrossed in particular points following the interferential relation between them; these points are very important points for intervention (diagnostic or therapeutic) into the dynamic of flows, of the dynamic of networks generating them.

The stability of the global system depends upon the continuity and constancy of the integrated flows of the material components and the connecting information particles between the various parts of the organism.

The armonic union and creative cooperation of these fields together maintains in the human being the physical, the mental and the psychic health; the "global metabolism flow system", the "mental flow system", "the psychic-spiritual flow system". Alterations and blocking of the metabolic flow of one of these three fields provokes correlated alterations in the other two fields as well as in all the being; this is the sickness, the disease.

An extension of the dynamical hypothesis in the construction of the vital, proposes to integrate the field of qi and the field of consciousness in the quantistic-relativistic theory of the fields; the action of the forces that interacts between the material bodies is mediated by the "glue" the messenger particles, that for the qi field we propose to call qi-ons.

All that the human being lives and experiments with his consciousness in the physical reality comes through the mediation of the qi-ons, in this relation only the human personality being able to intervene modifying creatively or destructively the natural relation flows.

The general program of diagnostic and therapeutical intervention on which we are working from many years, foresee the means of intervention towards a strategy involving all the layers of the sick person.

The coupling is fundamental in the communication; the transmission of the energy of information, occur only if the transmitter and the receiver are structurally and rhythmically resonant. We search for the most accurate specificity of the coupling; the love from the heal-

er towards the sick-man; the qigong action to reequilibrate the disharmony in the qi-ons flows of the control energy; physical means communication with accurate geometrical structure, the proper pattern and the harmonic frequency to ensure the modulatory activity of the physical flows (photons, solitons, chemical substances, etc.) to control the biological tissues equilibrium.

1-4 A SCIENTIFIC STUDY OF THE PRINCIPLE OF HEALING BY QIGONG

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Qigong which has spread all over the world as a method of treating or preventing diseases and promoting health is one of the fields of traditional Chinese medicine (TCM), and has been established on the same fundamental theory or the same principle of clinical effects as acupuncture and herbal medicine. There is no exaggeration to say that the questions such as "what is qi?" or "what is qigong?" might be the same as to ask "what are human beings?" Thus, considering qigong as a "medicine of qi" in a broad sense, we tried to reveal the mechanism of clinical effects in TCM including qigong through scientific approach.

Subjects were 200 persons in total, consisting of healthy adult volunteers and patients with various diseases. Methods such as examination of the literature, neuro science, nuclear medicine, image technology and metric medicine were used for scientific approach to principle of clinical effects of qigong to perform comprehensive analysis and discussion.

The following results were obtained;

(1) Examination of the literature such as, among others, *The yellow Emperor's Cannon of Internal Medicine* revealed that "Mind control" is the fundamental principle of qigong and acupuncture therapy. Mind control is the key concept of TCM, which suggests that it is the most important element for clinical effectiveness of therapy to control functions of the brain as the center of the inner qi both in the mental and physical aspects.

(2) Aiming at scientification of mind control, the effect of acupuncture stimulation on the cerebral functions was analyzed by using EEG topography and positron CT (PET). Changes in EEG topogram caused by acupuncture stimulation could be observed all over the cortex, though they were prominent in the area from the frontal lobe to the parietal lobe. Positron CT images indicated that acupuncture stimulation temporarily activated from the paleocortex to the neocortex, affecting a wide range of the cranial nerve cells including A₁₀ nerve.

(3) Considering mind control as a multidimensional phenomenon pattern involving complicated factors, we performed multivariate analysis of complaints of patients with chronic pain to establish a theoretical model common to pain control and mind control. It indicated that this theoretical model of mind control was not only the principle of healing of TCM including qigong but also a fundamental principle of recovery from illness of religious therapy.

1 — 5 THE INFLUENCE OF QIGONG TRAINING ON COHERENCE OF EEG DURING ONE YEAR PERIOD

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In this study, we analysed the coherence of EEG to observe the trainees' EEG regularly. The young students, who were 17 to 20 years old, had been practicing "Zhanzhuang Gong" for one year. We try to find out the effects of the qigong training period on coherence of EEG. 32 persons in the qigong group and 35 persons in the control group were involved in this experiment. During one year period of observation, the subjects of the qigong group practiced qigong for 40 minutes every day. The EEGs of the qigong group were analysed every half year in meditation, and the EEGs were also recorded before learning qigong. The students in the control group did not take part in the qigong training and the EEGs of them were investigated at rest twice with an interval of one year. In the test, eight channels of EEGs were simultaneously processed by a computer on line for 20 minutes. The program, "computer evaluation system for the qigong state" was provided by the "Laboratory of Bio-Control, Department of Electrical Engineering, Zhejiang University".

After one year of qigong training, total coherence between the left and right frontal regions increased from 0.84 ± 0.07 to 0.87 ± 0.06 ($p < 0.05$). Before qigong training, the total coherence between the left and right occipital areas was 0.68 ± 0.14 . After half year's training, it increased to 0.79 ± 0.10 , and after one year's training, it was 0.76 ± 0.10 . Self comparison showed the probability was less than 0.001. The total coherence between the left and right temporal areas before qigong training was 0.48 ± 0.17 ; half year after qigong training it was 0.55 ± 0.13 , compared with that before qigong training ($p < 0.05$). One year after qigong training it was 0.64 ± 0.12 , compared with those before qigong training and half year after qigong training ($p < 0.001$). Qigong training had no significant influence on coherence between the left and right central regions and between adjacent anterior and posterior brain regions ($F_3-C_3, F_4-C_4, C_3-O_1, C_4-O_2$). It had no significant difference between the qigong group without learning and the first recording of the control group at the same time. The data from the two tests of the control group showed that the total coherence did not change sig-

nificantly between the left and right corresponding brain regions and between the anterior and posterior adjacent brain regions.

The results showed that qigong training had affected coherence of EEGs between the two frontal regions, between two occipital regions and between two temporal regions of the qigong group in meditation; The most significant is that, with the increase of training period, the total coherence value between the left and right temporal areas went up. It seems that there is certain dosage-effect relationship. It is suggested that the value of the total coherence between the left and right temporal areas should be comparatively sensitive and objective parameter of meditation.

This study was supported by the National Administration of Traditional Chinese Medicine

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1 — 6 MEASUREMENT OF PHYSIOLOGICAL PHENOMENA AND OTHERS OF QIGONG MASTERS UNDER THE QI- GONG STATE

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It is quite important to measure the physiological and engineering phenomena of qigong masters for analyzing the qigong mechanism. In this report, we used the following measurements as much as possible: EEG topograph, three dimensional display of brain wave by using an IBVA, heart rate and blood pressure by a Finapres BP Monitor, breathing rate monitor through his nose by using a microphone to his nose, thermograph and also far-infrared signal detection as a function of time from qigong masters.

Dynamic qigong case

When the surface temperature of his face and hands measured went up under the qigong state, the change came out from the effective spots by applying moxa. Also his heart rate and blood pressure increased about 26% and 40% respectively compared with his normal condition. At the same time, his breathing rate increased about 247%. Although the experiment time under the qigong state was only 90 seconds, a special oscillation about 1Hz in his far-infrared radiation was detected from his palm, but it was not detected before and after. The oscillation signal wave could not pass through a 2 mm thick aluminum plate and also a 5 mm thick cardboard plate. In this case, α and β waves in his right side brain worked actively compared with his left side.

Static qigong case

In the static qigong case, his heart rate and blood pressure also increased about 22% and 25% respectively and the thermographic temperature of his face increased. In this case, it was recognized that β wave of the brain wave vanished almost completely and the low α wave increased slightly in his brain data of the IBVA. From the EEG topographic data, it was understood that the intensity of the low α wave was not constant, rather it went up and down. And also, we found two voltage sources existed in the frontal right side of his brain.

* **1-7 A STUDY OF THE POSSIBILITY OF PUSHING BLOOD FLOW TOWARDS THE HEAD AND CHEST IN THE LYING POSITION WITH THE HEAD ON A LOWER LEVEL DURING QIGONG EXERCISE**

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The paper discusses the general, physiological, biochemical and electroneurographical responses and the endurance time to tilt test during qigong exercise and the condition of the control group before, during and after HDBR (-6°) for 7 days. The results are as follows.

1. HDBR (-6°) for 7 days played a simulated weightlessness part in short space flight.
2. Compared with the control group, CEF, SV, CO. of the qigong group decreased significantly when they concentrated their minds on the lower limbs. At the same time, UBF, Rcbf/Rllbf, Rsv/Rllbf, the skin temperature of the lower dantian area and the gastrocnemius muscle and the transcutaneous oxygen (TPO_2) on the muscle increased significantly. The content of cortisol and aldosterone in urine and SOD in blood of the qigong group were better than the control group, and the latency of H reflex and the motor nerve conductive velocity (MNCV) of the peroneus nerve of the qigong group were better than the control group. The endurance time and CID of the tilt test were significantly better than the control group. The general response of the qigong group during and after HDBR (-6°) for 7 days was less than the control group.
3. From these results, we reach a conclusion that qigong can push blood flow towards the head and chest in the lying position with the head on a lower level during qigong exercise. At the same time, qigong can improve the physiological, biochemical systems, electroneurographical responses and the endurance time to tilt test.

1 — 8 THE STUDY OF MAGNETIC SIGNALS UNDER THE QIGONG STATE BY SUPERCONDUCTING BIOMAGNETOMETER

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In the previous article we finished a dynamic study of qigong (QG) magnetic signals (MS) by a flux-gate magnetometer in a magnetically shielded room. Under the QG state, MS was $< 2\text{Hz}$ in frequency and several nT ($T = \text{Tesla}$, the unit of magnetic flux density, $1\text{nT} = 10^{-9}\text{T}$) in amplitude. In order to deeply understand the MS dynamic properties, human weak MS was investigated by a superconducting biomagnetometer. In comparison with the flux-gate magnetometer, the superconducting biomagnetometer is wider in frequency response (DC to 10KHz only DC to 10Hz in the flux-gate magnetometer) and higher in sensitivity. Through a frequency-power spectrum analysis by a computer, the MS changes under QG state can be analyzed quantitatively.

20 persons (38 tests) were selected as subjects, and divided into two groups. (1) The control group consisting of 3 persons did not practise qigong, 46.3 years old in average; (2) The qigong group (practising for 1-20 years) consisted of 17 persons (31 tests), 48.3 years old in average.

The subjects took off all magnetic things; then came into a magnetically shielded room, and the acupoint to be measured aiming at the probe. The distance between the probe and Laogong (P8) is about 6 cm, and that between the probe and head acupoints is about 4.5cm. The MS dynamic changes were recorded continuously before, during and after QG state (3 minutes each).

MS was measured by a superconducting biomagnetometer, Model M-601, and recorded by a tape recorder, Model MR-30C. (2.4cm/sec in tape velocity). The frequency-power spectra were analyzed by a signal processor, Model 7T17-S. In this paper the power changes were all of relative values.

The experimental results indicate that under the QG state three kinds of MS ($< 1\text{Hz}$, 3Hz and $< 2\text{KHz}$) are measured from different acupoints Laogong (P8), Baihui (Du 20) Yintang (Extra); there are three kinds of MS changes in intensity: increasing, decreasing and no change; and there is a good repetition of the change patterns and signal frequency of MS. Two novel phenomena were found, i. e. decrease of power and the change of frequency spectrum in MS during the QG.

1-9 KIRLIAN IMAGING—VISUAL INVESTIGATIONS INTO THE NATURE OF QI AND THE EFFECTS OF QIGONG

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Investigation into qi and qigong using the Kirlian photography shows that the energetic field surrounding the fingers varies constantly and is strongly affected by thought and emotion. While these findings are difficult to explain through western physics, they are easily explained by the Chinese concept of qi. Traditional Chinese medical theory holds that this energetic fluid permeates and surrounds all living things, its flow and function in constant flux with every movement and thought. Kirlian Photography produces a faint corona discharge around each finger which is easily directed by minor changes in the electrical characteristics of the finger and surrounding air.

Research comparing the Kirlian photography of fingers to acupuncture diagnosis have found that a small Kirlian image surrounding a particular finger corresponds to a weakness in the internal organ associated with the meridian that flows to that finger. Research into psychological disturbances shows that depression is associated with small Kirlian images, and that schizophrenic patients often have twisted, confused Kirlian images which become more normal when the patient gets improvement.

Drawings from thousands of Kirlian photos of individuals showed that young people had brighter pictures than the elderly and healthy individuals had brighter pictures than the ill. Healers usually have very strong pictures.

I took a group of people and had those with the larger images act as the "therapist", rubbing the shoulders on the other, the "patient" for 3 or 4 minutes. The image of the "patient" got dramatically bigger, which is what most people would expect. However, that of the "therapist" got much smaller. Often the "patient" would report less discomfort and more energy while the "therapist" reported feeling slightly more tired. The implication is clear that qi has been transferred from the "therapist" to the "patient".

Many qigong doctors limit their load of qigong treatments to no more than three patients per day to avoid illness. They also spend several hours per day doing qigong exercises to rebuild this qi. Kirlian photography shows that many qigong masters can, at will, create huge Kirlian images. qigong doctors who have just finished treating a patient or emitting qi during a lecture will often have a very small Kirlian image or none at all!

1—10 INFLUENCE ON THE VEGETATIVE FUNCTION AND ITS MECHANISM BY BREATHING HARMONIZATION

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It is well known that qigong is the effective methods of nonmedicine, which may delay the aging process and treat chronic diseases, but its mechanism is needed to study further. In the present study, 64 qigong exercisers and 12 rabbits were investigated with the modern electrophysiological method, so as to explore the influence on the respiratory rate, heart rate, finger sphygmogram and small intestinal movement by breathing harmonization.

1. Influence of qigong exercise on respiration, finger sphygmogram and bowel sound

For the 64 qigong exercisers, the change of their respiratory rates, finger sphygmograms and bowel sounds were measured before, during and after qigong exercises. Before qigong exercise, the respiratory rate was 17.1 ± 0.4 times/min ($\bar{X} \pm SE$), the amplitude of finger sphygmograms 8.2 ± 0.88 mm ($\bar{X} \pm SE$) and bowel sounds 12.0 ± 1.1 times/min ($\bar{X} \pm SE$). During qigong exercise, the respiratory rate was 10.6 ± 0.8 times/min, the amplitude of finger sphygmograms 9.7 ± 0.9 mm and bowel sounds 16.3 ± 1.1 times/min. The differences of the respiratory rate, heart rate and finger sphygmogram were very significant between the periods before qigong exercise and during qigong exercise.

2. Influence of different respiratory mode of qigong exercise on finger sphygmogram and bowel sound

When qigong exerciser's inhaling was longer than exhaling, the amplitude of finger sphygmogram and bowel sound reduced; When the exhaling was longer than the inhaling, the amplitude of finger sphygmogram and bowel sound increased. The differences of the indexes mentioned above were very significant between these two respiratory modes.

3. Influence of respiratory stop on bowel sound during qigong exercise

When the respiration stopped for 20 seconds at the end of inhaling the bowel sound increased considerably; When the respiration stopped for 20 seconds at the end of exhaling, the bowel sound reduced significantly.

4. Influence of lung dilation or lung atrophia on blood pressure, heart rate and intestinal movement

In order to further explore the mechanism of effect of respiratory process on the capacity of finger blood vessel and bowel sound, experiment was performed on 12 rabbits. (1) When the lung was further dilated at the end of inhaling, blood pressure reduced, heart rate decreased and intestinal movement increased. After an injection of Atropine, the effects of lung dilation on blood pressure, heart rate and intestinal movement were not significant. (2)

When the lung was shrunk further at the end of exhaling, blood pressure elevated and heart rate and intestinal movement reduced. After an intervenous injection of Atropine the effects of the lung atrophia on the heart rate and intestinal movement were not significant but blood pressure was still elevated, indicating that the effects of the lung atrophia were associated with M receptor activity.

1 - 11 A STUDY OF PREVENTION OF CARDIAC FUNCTION DISORDER DUE TO IMMEDIATE ENTRY INTO HIGHLANDS BY QIGONG EXERCISE

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Change of cardiac function might happen to persons living on plains who quickly enter the Tibetan plateau. Before entering the highlands, 66 persons were divided into two groups: the qigong group, including 32 young men who had taken exercise of Qiyuan Qigong for 4 weeks. The control group, including 34 persons did exercise to radio music. The results showed that in the highlands, the attack rate of altitude stress and abnormal blood pressure, heart rate, oxygen consumption and the weighted integral value of symptoms due to highlands, were statistically lower in the qigong group than in the control group; the index of the cardiac function of both the two groups statistically lowered at Tibet on plateau and TPR in the qigong group was statistically lower than in the control group, but the indexes such as SI, CI, Ac, HI of the qigong group were statistically higher than those of the control group. It is suggested that exercise with qigong should prevent cardiac function disorder due to highland and needs in-depth studies.

1 - 12 A STUDY OF PREVENTION OF MICROCIRCULATING DISORDERS OF PILOTS IN HIGHLANDS BY QIGONG

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Microcirculating disorders might happen to persons living on plains who quickly enter the Tibetan plateau due to deficiency in oxygen. Some airforce pilots were randomly divided into two groups: the qigong group, including 22 persons who had practised Qiyuan Qigong exercise for eight weeks; the control group, including 18 persons who had exercised with common physical training for eight weeks, before entering the Tibetan plateau and their symptoms due to high mountains microcirculation of epes tongue and nail fold, temperature at Laogong (P8) of the left hand were measured before and after their entering the Tibetan plateau. The results showed that the integral value of symptoms due to high mountains in

the control group from day 1 to 7 at the Tibetan plateau was statistically higher than that in the qigong group ($p < 0.01$ on day 1; $p < 0.01$ on day 3; $p < 0.05$ on day 7;) the incidence of abnormal blood pressure and microcirculation on epex tongue and nail fold in the two groups increased at the Tibetan plateau, but statistically lower in the qigong group than in the control group ($p < 0.01$); at the Tibetan plateau, temperature on Laogong (P8) kept steady in the qigong group, but statistically reduced in the control group ($p < 0.05$). It is suggested that qigong exercise should redress altitude stress, prevent microcirculation disorders, strengthen the suit capacity of human body and shorten the suit time. In a word, qigong is an economic, convenient exercise which may prevent altitude stress and be easy to be popularized in the army.

1-13 A STUDY OF THE INFLUENCE OF YUAN JI QIGONG ON PHYSICAL AND MENTAL HEALTH OF STUDENTS

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Qigong is the valuable heritage of the Chinese culture, which has unique function in preventing and curing diseases and improving health. It has been reported that the great results have been achieved and the influence of human beings' physiological and psychological indexes given by Yuan Ji Qigong in the combination of Yuan Ji Qigong and modern science. But we fail to read the accounts of comprehensive effects on human beings' physiology, psychology and sport ability. In order to study the effects of Yuan Ji Qigong on the physical and mental health, we made the primary study and comparison of the changes in Tongji Medical University in physiology, psychology and sport ability of students between the practicing group and the control group before and after practising Yuan ji Qigong from November of 1991 to April of 1992. The results showed:

1. The students in the practice group didn't perform Yuan Ji Qigong before they ran 800m, through a short period for 20' 40' after running 800m, lactic acid clean rates in blood were 20.1% and 57.1% respectively. After practising Yuan Ji Qigong lactic acid clean rates in blood were 36.6% and 80.3% respectively. The difference between the states after and before practising Yuan Ji Qigong was statistically significant ($p < 0.05$). The result indicated that practising Yuan Ji Qigong and listening to Yuan Ji Qigong music could remove students' tiredness and increase students' lactic acid clean rates after sports and speed up physical recovery.

2. Before practising Yuan Ji Qigong the step index of the students was 45.2 in the practice group. After practising Yuan Ji Qigong the step index of students is 64.2. The difference between the two groups was statistically significant ($p < 0.01$). The results showed Yuan Ji Qigong can improve the circulation, raise the ability of heart storage, so doing Yuan

Ji Qigong can strengthen the body and increase sport ability.

3. Before practising Yuan Ji Qigong, the grades of the forceful symptom, the sensitivity of relationship between people, the gloom, the anxiety, the hostile to the others were 1.24, 1.1, 0.9, 0.75, 0.83 respectively, but after practising Yuan Ji Qigong the grades were 0.98, 0.85, 0.68, 0.55, 0.64 respectively. The results showed that practising Yuan Ji Qigong can improve the mental state and help them overcome their obstacle in behavior and emotion.

1-14 INFLUENCE OF MENTAL ACTIVITY ON THE RESPIRATION REGULATION DURING QIGONG EXERCISE

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Ancient qigong literature described mental activity as "fire", respiration-regulation as "wind", and considered that the integrated "fire" and "wind" can produce a marvellous physiological action. The course of mind concentration on respiration regulation was called "WU HUO PENG LIAN", the process of mental quiescence and smooth breath was called "WEN HUO MU YU". They played a very important role in some processes of qigong exercise.

Physiological information can be derived from the instantaneous heart rate, which depends upon the interaction between the pacemaker properties of cardiac tissue and autonomic nervous system activity. Sophisticated analysis of R-R interval variability by the power spectrum method reveals that there are two major components; a high frequency component of around 0.3Hz, corresponding to respiratory sinus arrhythmia, and a low frequency component of around 0.1 Hz, which is called Mayer wave and reflects the spontaneous oscillations of the cardiovascular system. Recent studies in this field showed that the two spectrum peaks of low and high frequencies are mediated separately by sympathetic and vagal activities. Thus, the ratio of low- to high-frequency could be a marker for assessing the change of sympatho-vagal balance. In addition, these spectrum peaks could affect each other in a certain condition, and forms the phenomenon as the "entrainment of frequency" described in the physics term.

In this study, the relation between the mental activity and respiration regulation was observed by using spectrum analysis for R-R interval variability on 60 volunteers. The results showed while respiratory frequency was regulated lower down towards the cardiac oscillatory frequency, the amplitude of the respiratory spectrum peak increased significantly, indicating the vagal activity to enhance. On the contrary, when the respiration regulation frequency increased, its amplitude decreased and the ratio of low- to high- frequency increased, indicating the sympathetic activity excited. It reveals that the change of respiratory frequency con-

trolled actively by the mental activity could alter the ratio of the low- to high- frequency, reflecting the direction of autonomic nervous balance. However, when the mental activity was quiescent and the respiration regulation was passive, the natural oscillation of cardiovascular system increased, both the respiration regulation frequency and its amplitude decreased. The spectrum peak of respiration regulation keeps to the natural oscillation of the cardiovascular system by reaching the psychosomatic tranquil state. At last, the two spectrum components combined to an united peak around 0.1 Hz, which indicates the sympatho-vagal balance came into a special state.

In conclusion, it can be verified by using the method of current experimental physiology for the relation between the mental activity and respiration regulation described in ancient qigong literature.

1—15 EXPERIMENTAL RESEARCHES ON QIGONG'S EFFECT ON THE DIGESTIVE TRACT

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A section of intestine in vitro, the change of gallbladder under the ultrasound B and the intestinal microflora were analysed in this paper. Qigong effect on the mechanical digestion, chemical digestion and intestinal microecology was studied respectively.

1. The action of qigong on a length of intestine in vitro; Qigong masters emitted qi to the intestine under constant temperature for 10 min. Oxygen was given. The contractive range obviously increased. 15 min later qigong masters finished qi emission, its contractive range continued going up, but its contractive frequency did not change.

2. The gallbladder's changing before and after meditation under ultrasound B; The horizontal diameter and wall thickness of the gallbladders before, in and after meditation in 12 people who were doing qigong exercise were examined with a Shimadzu SDV ultrasound instrument. The results showed that the horizontal diameter of the gallbladders increased and the wall thickness decreased 5 min after meditation. It reveals that the secretion of the bile grows in quantity.

3. Qigong effect on the intestinal microflora; When feces of 7 exercisers over a long period were assayed. The number of pathogenic bacteria such as intestinal bacille, cocci etc. were fewer than that of the control group, while the number of the beneficial anaerobes, for instance, lactobacilli, bifidobacteria and so on, was higher compared with the qigong group. The test in vitro had also proved that the emitted qi had bactericidal action on pathogenic bacteri-

a. Huichunsheng-bifidobacteria could bring about a great advance in the contraction of a section of intestine in vitro.

4. Comprehensive analysis: Qigong promotes the mechanical digestion, chemical digestion and equilibrium. There are three possible reasons about it.

(1) In view of physiology, via the integration of the vegetative nervous system, qigong sharpens the parasympathetic excitability to strengthen the intestinal peristalsis and increase the secretion of bile and so on.

(2) Since the digestive tract with two openings at both ends is the typical ecological system coming into bloom from the standpoint of systematics, qigong can promote the systematic process of the human giant system, including the digestive tract.

(3) According to microecological view, qigong can advance the growth of dominant microflora in the digestive tract and inhibit the growth of the pathogenic bacteria.

1 - 16

A STUDY OF QIGONG HARMONIZING THE HUMAN CIRCULATORY SYSTEM

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Qigong is effective in stimulation of human body's potential power, which functions well in prevention and cure of diseases. In order to study qigong action on blood circulation and prevention and cure of cardiovascular and cerebrovascular diseases, we have observed the value of PWC 170 and measured the change of brain tachogram and limbs' volume pulse chart 30 days pre-and post-qigong exercises through the load test of the heart function. 100 subjects were divided into two groups: the qigong group (80 persons) and the control group (20 persons). The results show as follows.

1. Load test of the heart function: The value of PWC 170 of the qigong group and the control group having mineral spring bath was measured 30 days pre-and post-their practice with a BCM-III type heart function machine. The subjects were given two different loads during the test, each lasting for 3 min with an interval of 3 min. The heart rate was recorded for half min, starting from 2.5 min, and then the value of PWC 170 and VO_{2max} was calculated. The results showed that in the qigong group averagely it increased by 48.8% after the exercise and the control group averagely increased by 7.5%, a significant difference between the two groups ($P < 0.05$). The qigong group's VO_{2max} increased by 29.9% after the exercise and the control group's increased by 4.4%, a significant difference between the two groups ($P < 0.05$). It indicates that qigong is an effective method to strengthen the heart and lung function.

2. Brain tachogram: The left amplitude of wave averagely increased by 80.4% ($P < 0.01$)

after the exercise for 30 days, the right increased by 37.8% ($P < 0.01$); the left resistance index decreased by 6.3 times than the period of pre-exercise ($P < 0.01$), the right decreased by 8.1% ($P < 0.05$); the left ascending time decreased by 21.2% ($P < 0.01$), but the right increased a bit. It shows that qigong exercise can increase blood volume of the brain and decrease cerebrovascular resistance.

3. Limbs volume pulse chart: Amplitude of wave of both sides increased remarkably after the exercise ($P < 0.01$); the resistance index of both sides decreased ($P < 0.05$); the left inflow volume speed increased by 16.7% after the exercise ($P < 0.01$); the right increased by 17.8% ($P < 0.05$). It shows that blood volume of the lower limbs increases and blood resistance decreases after the exercise. To sum up, qigong may harmonize the blood circulation remarkably, playing a very important role in preventing and cure of cardiovascular and cerebrovascular diseases and lower limb disease. Qigong is a kind of exercise to harmonize the mind, breathing and bodily posture, a rehabilitative method for many chronic diseases. The result has provided a preliminary experimental basis for preventing and curing the circulatory system diseases.

1-17 THE EFFECT OF QIGONG ON THE HEART FUNCTION

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The paper reports the effect of qigong on the heart function. The trainees involved in this experiment were 37 middle-aged intelligentsia, 25 males and 12 females between 35 to 45 years old. During the first three months, the subjects accepted the emitted qi remedy twice a week besides their independent exercises for an hour, twice a day. In the next nine months, the trainees practiced by themselves without the emitted qi remedy. A RM-6000 polygraphy was used to record electrocardiogram (ECG), phonocardiogram (PCG) and carotid artery pulse (CAR) simultaneously three months before and after the emitted qi remedy as well as a year later respectively to determine the left heart systolic time intervals. After three months of the emitted qi remedy the trainees' heart rate (HR), electromechanical systole (Q-S₂), projection period (PEP), left ventricle contraction time (LVET), systolic pressure (SP) and diastolic pressure (DP) were not statistically different from those of three months before. While after one year of practice, the measurements were found to have a significant difference compared with those of before the exercise in all the index mentioned above except HR, isovolumic contraction time (IVCT) and Q-S₂. The following table indicates that qigong practice improves the heart function.

	HR	Q-S2	PEP	LVET	PEP/LVET	IVCT	SP	DP
before practice	69.2±5	395.9±10	95.3±5	301±5	0.32±0.009	39.4±10	156±6	87±5
three months of the emitted qi remedy	69.1±6	395.0±11	94.6±8	305±4	0.31±0.01	39.6±11	157±5	88±6
after one year of practice	76.0±5	398.0±8	82.9±10	315±11	0.27±0.009	38.5±12	126±8	70±10

1. Results were mean±SD.

2. * * and * * * represented $p < 0.01$ and $p < 0.001$.

3. T test was used in comparisons of SP, DP, HR and PEP/LVET, and analysis of covariance in other index.

1 — 18 THE EFFECT OF STEP-LEAP RESPIRATION ON THE CARDIOVASCULAR FUNCTION UNDER THE ANAGOLOUS QIGONG STATE

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The final conclusion has prevailed for long that respiration has a definite effect on cardiovascular function. The Institute of Physio-Medical Engineering of the China Academy of Medical Science has put forth the training model of respiration by making use of the cardio-electric feedback control. Through such a specific breathing drill, it is intended to enable the internal pressure of the chest of one under training to take the shape of a step-leap of each inhalation phase, and precisely at the time of the systole of the heart (a certain time after the cardioelectric R wave) it positively increases the transmural pressure of the chest aortas, thus lowering the obstruction of the cardiac ejection of the heart. The repeated chest internal pressures coming from the exhale phase occur exactly at the time of the beginning of the diastole of the heart (a time after the cardioelectric T wave), positively reduce the transmural pressure of the chest aorta, increase the systolic pressure of the arteries and enhance the perfusion pressure of the blood supply of the coronary vessels. Just as the effect of the negative step-leap of the chest internal pressure in the course of inhale on the heart and arteries is similar to the effect of the counterpulsation of the pneumatophore (JABP) of the arteries on the air discharge of the pneumatophore at the time of the systole of the heart, the positive step-leap of the chest internal pressure on the coronary vessels is similar to the effect of JABP air-filled distalation. Therefore, this self-controlled step-leap respiration plays its own feedback role. Due to its specific design, it has a favourable effect on the function of the coronary vessels through effectively increasing the transmission of pressure from the chest pump to the heart pump. Researching observations in contrast were conducted on two groups of persons under-

going experiments (30 cases of healthy youths and 14 cases of chronic heart problem) concerning the function of their coronary vessels before and after the training. The data emanating from a colour Doppler supersonic diagnostic instrument showed that the self-controlled step-leap respiration training could distinctly slow down the rhythms of the heart of one under experiment, mitigate the afterload of the heart, increase the distolic pressure so as to increase the pressure of the entrance to the coronary vessels, increase the discharge amount at each pulsation and reduce the work function of the heart. It has a definite role to play in the improvement of the diastolic work of the left ventricle, the enhancement of the adaptability of the left ventricle and the improvement of the working condition of the right ventricle. At the same time, it can greatly mitigate such subjective symptoms as a sense of suppression in the chest, chest pain and shortness of breath for those suffering from obstruction of heart functions. Due to its features, such as its non-invasive nature, its non-medicinal nature and simple method, it undoubtedly provides an entirely new method for the recovery and treatment of the heart problems.

1—19 THE EFFECT OF TAIJQUAN ON MERIDIAN WAVES

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Taijiquan is a kind of internal qigong and the meridian theory is one of the fundamental theories of qigong. By using electroencephalographs (EEGs) and vibration transducers the author tested the electroencephalograms, meridian waves and electrocardiograms (EECs) in thirty Taijiquan exercisers and thirty-one non-Taijiquan exercisers. The following results clearly demonstrated the Taijiquan group, the degree of coupling between the "heart--meridian" and H/L value of Baihui (Du20) was noticeably higher than the control group ($P < 0.005$, $P < 0.002$). When the Taijiquan group entered a relaxed state, the frequency of the meridian waves compared with the waves of the non-Taijiquan group reduced ($P < 0.05$).

This paper holds that Taijiquan promotes smooth flow of qi and blood to get rid of diseases. In addition Taijiquan may help people to reach utmost harmony or coupling of the various systems of the body.

**1 — 20 A STUDY OF THE DETECTION OF CHANGES IN
METABOLIC ENERGY IN A SUPERFICIAL ACU-
POINT OF QIGONG EXERCISERS AND ITS CLINICAL
SIGNIFICANCE**

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Through a general survey we have monitored at random the people who did qigong exercise in order to study their microchange of the superficial partial temperature by means of a detector of human energy metabolism. The results show that before and after qigong exercise, the characteristic energy change of the superficial acupoints is related to the pathological changes of internal organs and meridians. Their internal and external responses had regularity. It confirms the characteristic energy change of New Daxi (acupoint) provides relevant specificity. It is the first time we have discovered that the detection of the loss of the specific energy equilibrium of New Daxi is a diagnostic way for tumors.

**1—21 INFRARED PHENOMENA UNDER THE QIGONG STATE
AND BLOOD VESSEL VOLUME**

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Infrared phenomena under the the Chen Wenhua qigong state has been researched for more than ten years. This thesis, on the basis of the research, first studies the infrared phenomena under the qigong state on physiological theory, and discusses the relationship between the infrared phenomena under the qigong state and the changes of vessel volume. In order to study the relationship between the changes of the infrared temperature under the qigong state and the changes of digital vessel volume, we observed 192 volunteers' change of infrared temperature and vessel volume from the pre-qigong state to post-qigong state at the same time. All results indicate that the changes of the infrared temperature under the qigong state were related to the changes of partial vessel volume. It also means that the vessel volume increases while the infrared temperature is rising. There might be the relationship of cause and result between the two items.

Since the skin temperature and digital vessel volume are affected by many factors including influence of personality, the further research will be done on the basis of the development of experimental techniques and more experimental samples.

1-22 USE OF SURFACE ELECTROMYOGRAM TO EXAMINE THE EFFECTS OF THE INFRATONIC QGM ON ELECTRICAL ACTIVITY OF MUSCLES, A DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY

Richard H. Lee, B. S. , U. S. A. , Wang Xiaoming

Emitted qi from qigong doctors is a fascinating phenomenon and its study will provide an insight into qi and contribute to modern medicine. This phenomenon is difficult to study with scientific protocols in the clinical setting because of the problem of human involvement in the experiment. In the present study, an electroacoustical device that simulates the aspects of emitted qi (the Infratonic QGM) was used because it provides a much greater level of control than would a protocol that involves qigong doctors.

For many years Surface Electromyogram (SEMG) has proven to be a versatile tool in the evaluation of chronic pain syndromes and in the documentation of extent of injury and progress toward recovery.

A total of 57 subjects were tested. Subjects first filled out a demographic questionnaire, then proceeded to the testing room where their right shoulder was marked at the selected treatment point. The skin surrounding the mark was abraded with an alcohol wipe and SEMG was then measured.

Each patient was then treated for ten minutes by either the Infratonic QGM or by the placebo device. The treatment room administrator was entirely unfamiliar with the QGM and had no idea which device was the real Infratonic QGM and which were the placebo device. Once the treatment was completed the subject returned to the testing room where the SEMG of the shoulder was retested as before.

Of the 57 test subjects, three left before completing the post test. Of the 54 test subjects for whom the data set was complete, 27 were in the placebo group and 27 in the Infratonic QGM test group. The data from SEMG readings of these two groups are as follows:

SEMG (Microvolts)			
	Before	After	% Change
Placebo	16.6 ± 3.2	17.2 ± 2.6	+3.6%
QGM	16.3 ± 3.1	13.3 ± 2.4	-18.4%

The SEMG readings for the subjects who were treated by the placebo device increased by 3.6% whereas the readings for the group treated with the Infratonic QGM decreased by

18.4%. There is a difference between the two groups of 22%. The observed decrease in SEMG indicates that an effect of the Infratonic QGM is to lower electrical activity of muscles.

1-23 SCIENTIFIC RESEARCHES ON MEDICAL QIGONG VOCALISATION

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We have started analysing original recordings of vocal tones performed by taoistic masters and measuring the frequencies of the notes; we were bewildered from the spectral pureness of the tones, from their perfect correspondence in the reproducibility even after some months and from their incredible stability.

The analysis at the oscilloscope of a sound vibration, commonly named "vocal print of the word", it's a vibration characterized by damped waves, while the taoistic vocal tone vibration is very different, because it's characterized by waves of high spectral pureness mono-frequency and it is constant in the time. This last type of waves are, with no doubt, sinusoidal vocal waves, stable during time.

It is clear that a person not properly trained, is not able to maintain the vocal tone of the specific wave-length constant during time, but also is not able to form a sinusoidal character, meaning of a sufficient spectral pureness.

It's probably this ascertainment the foundation of the sacrality of the revealed word in the initiation traditions.

We have observed the abdominal area; the navel is in constant temperature in all the examined subjects. The area under the navel in these subjects shows certain distinctive characteristics, in comparison to the controlled subjects; there is a rhomboid area marked in the center by cold spots probably corresponding to the acupuncture points; GUANYUAN (Ren 4), SHIMEN (Ren 5), QIHAI (Ren 6).

Then we have started to practice the vocalisation's technique of the specific tone in mental peace. After a few minutes of practice the areas under the navel start showing a stronger

intensity of thermic emission and the subjects felt a heat sensation; then the first paramedian hot spots appear and their intensity increase during time, tending to come together in a more spread area.

The ancient discoverers of these energetic techniques must have been in possession of highly developed knowledges concerning the hierarchy of complex working and the correlation existing between the mechanic and cinetic vibrations and the production and preservation of energy exploiting methodologies, that are still not quite clear. We hope that these exercises will be more and more taught and spread in order to really use preventive and curative techniques, effective and cheap for treatment of affections.

1—24 STOMACH VOCAL SOUND STIMULATION AND E. A. V. MEASURE OF ZUSANLI(st 36)

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Vocal sounds are part of ancient traditional Chinese medicine and are known to be one of the Taoist secrets.

Our work has tried to demonstrate the ability of the human voice to induce an organ energetical reaction, in order to establish a normal pattern of qi in acupuncture points and meridians.

The vocalization of Li Xiaoming has been recorded with a digital equipment in a second time, the recording has been rearranged in a professional musical studio in order to obtain 10 minutes of a continuous sound. This has been possible through a sophisticated mixing duplication technique based on vocal computerized sampling.

We chose, as a vocal reference, the healing sound of the stomach. This sound has been proposed for several minutes to 10 voluntary subjects, in a silent room, lying on beds, with eyes closed.

Measures of Zusanli(st 36) on the left leg of the voluntary subjects was obtained with a cybernetical equipment named Orthogen 200 built in California, U. S. A.

This equipment is based on the old technique proposed by the German doctor Voll in 1957, now rearranged in a more sophisticated computerized version.

Many studies, also developed in China, have been enhanced to detect electrical potential, recorded on the skin of patients but, in this instrument, the measure is very accurate and consent to determine the exact amount of energy present in an acupuncture point related also to the time necessary to induce distant organ reaction level. That means, in other words, to obtain the vascularization of the organ through the chemical-physical reaction measured in the

time domain. First data are suggestive of a significative modification of the energy pattern induced on stomach, as a response to a passive listening of the digitalized continuous sound reproduced on a tape recorder.

More incisive pattern is instead obtained by the direct vocalization of the sound as supported by classical qigong exercise, recorded with an Orthogen equipment, on some student of Li Xiaoming.

Final work will be sustained by more subject investigation and statistical and graphical analysis will be proposed.

1—25 THE EFFECT OF QIGONG ON THERAPEUTIC BALANCING MEASURED BY ELECTROACUPUNCTURE ACCORDING TO VOLL(EAV)

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Electroacupuncture According to Voll(EAV) was used to monitor the effects of qigong on therapeutic balancing of subjects. In EAV the electrical conductance of the skin above an individual acupuncture point is measured using a blunt metal probe and a low current. Diagnosis depends on measuring the maximum electrical conductance and its time dependence. The conductance is measured by a meter that is calibrated from 0 to 100. A reading of 50 indicates that the organ associated with the acupuncture point is free of pathological problems. Higher readings (higher conductance) are associated with inflammation and lower readings (lower conductance) with degeneration of an organ. In EAV, "indicator drop" is an important diagnostic criterion of a functionally disturbed organ. Indicator drops occur when the conductance of a given acupuncture point decreases from an apparent maximum value and then levels off.

EAV measurements were made before and after eleven subjects practiced qigong. Measurements requiring about 5 minutes were made of the conductance properties at 24 acupuncture points at the ends of the meridians of the fingers and toes of a subject. The instrumental test parameters were: 1. 25 volts d. c. output voltage, 12. 7 microamperes current output at full scale, and 95,000 ohms resistance at midscale (50). Tap water was applied to the skin surface in the region of the acupuncture point before pressing a brass probe (1/8" diameter) gently onto the acupuncture point. The subject held the other electrode in one hand. The computer was programed to provide information on twenty organs and physiological functions of the body for the right and left side of the body.

Two series of EAV measurements were made by the same operator and equipment. In both series, the subjects were asked to perform a qigong exercise of their choosing, usually

meditation or moving qigong. In the first series, four subjects were examined by EAV before and after qigong exercise. Three of the subjects were experienced qigong practitioners. The fourth subject was balanced by one of the qigong practitioners. The results show that qigong practice decreased the average meter readings of the four subjects taken as a group from 70.8 ± 4.8 to 52.7 ± 2.4 . The average change was $-25.5 \pm 4.9\%$ with a statistical significance of $p=0.004$. Indicator drops that were observed for all subjects prior to qigong decreased in value after qigong practice. For example, the sum of all indicator drops for each of three subjects decreased in value from 20, 22 and 53 to zero, respectively, and for the fourth subject it decreased from 129 to 28.

The second series of measurements was made six months later with seven subjects. Each of the subjects was examined by EAV three times, but the subjects did not reveal until afterward whether they had practiced qigong before the second or third examination. This "blind" protocol insured that the operator did not know when a subject had practiced qigong. For four subjects the average EAV readings were decreased by qigong practice from 72.3 ± 7.6 to 53.0 ± 9.8 ($-27.3 \pm 7.6\%$) and increased for three subjects from 66.5 ± 12.7 to 73.1 ± 10.4 ($+10.3 \pm 5.7\%$). When indicator drops were present in a subject's EAV before qigong, they decreased or became zero after qigong practice.

The results of this preliminary study indicate that EAV is responsive to changes associated with qigong practice. Therefore, EAV may provide basic information on how qigong balances body energy and affects specific meridians or organs.

1—26 QIGONG; BALANCING BIO-ELECTRICITY BY BREATHING BEFORE BIO-KINETICS

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In this study 4 subjects were evaluated in an effort to determine if performing a specific breathing qigong would actually effect the bio-electric levels of the body. All subjects were evaluated before and after performing meditation to see what changes had occurred, if any. For sake of ease and objectivity an instrument called the electro-meridian imaging unit (AKA Ryodoraku, Tokigraph, etc) was used to evaluate the source points of each individual. The source points or/and wrist points were used for standardization. When the pre-and post evaluations were compared, improvements, in regards to balancing of the individuals bioelectric levels, were noted in almost all instances.

1-27 EFFECT OF QIGONG ON PERSONALITY

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It is well known that personality and health are closely related. For example, the incidence of CHD is associated with type A behaviour pattern (TABP); several psychosomatic diseases are usually associated with neuroticism and so on. So if these types of personality could be modified by practising qigong, it should be useful to prevent and cure some diseases.

In the first part of our research, the effect of qigong on personality was investigated with the Eysenck Personality Questionnaire (EPQ) and Type A Behaviour Pattern Questionnaire. One hundred and twenty-two subjects who have practised qigong more than two years by a mean age of 65 were used as the experimental group. Ninety subjects aged over 60 who had never practised qigong were used as the control group. The results showed that the N score was significantly lower in the qigong group than that in the control group. The persons of TABP amounted to 39.3% in the qigong group, 51.1% in the control group.

In the second part of our research, all of the subjects were college students aged 21. Fifty subjects had practised qigong more than two years, and 97 subjects had never practised qigong. The results were similar to the first part of our research, i.e., N score of EPQ and percentage of TABP were significantly lower in the qigong group than those in the control group. These results suggest that qigong can relieve neuroticism, and TABP can be changed by practising qigong. As a great number of subjects were investigated in these researches mentioned above, the results should suggest that qigong is beneficial to correct the unhealthy tendency of personality to certain extent. But because of the cross-section study, it was difficult to exclude the factor of self-selection, then the longitudinal study was carried out by us.

In the third part of our research, the data of EPQ and TABP were collected from 158 college students when they started to practise qigong. Two years later, EPQ and TABP were measured again. There were 33 subjects who had persisted qigong exercise during the two years, but 83 subjects only for several days and 42 subjects for a few months. The N score of EPQ in the persistent group decreased from 13.4 ± 5.1 to 11.1 ± 4.9 ($p < 0.02$). No significant change of N score was observed in the third group (83 subjects, N score from 13.2 ± 4.7 to 14.2 ± 5.2). In the persistent group, TH score of TABP decreased significantly and CH score decreased slightly. In the third group, both TH and CH score had no remarkable change between two measures. All of these results suggest that qigong has positive effect on regulation of the unhealthy tendency in personality.

1—28 THE ROLE OF QIGONG ON MENTAL HEALTH

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This study includes three experiments.

I. Evaluating the role of qigong on mental health by the symptom check list 90(SCL-90)

1. The effect of qigong on mental health

I evaluated mental health condition in 27 persons who had exercised qigong for four months by using the of Symptom Check List 90(SCL-90).

My research results indicate that qigong has good effect on the 13 items. Statistic test reaches remarkable level except the average positive item and the depression item.

2. The effect of exercising time on the mental health

Table 1. Qigong effects on mental health

item	M±SD group of exercising qigong for less than two years(153 cases)	M±SD group of exercising qigong for more than two years(119 cases)	t	P
Total Scores	1.568±0.447	1.437±0.361	2.91	<0.01
Numbers of positive items	31.88±18.59	26.96±16.86	2.28	<0.05
Average positive items	2.56±0.618	2.39±0.56	2.39	<0.05
Somatization	1.567±0.661	1.45±0.49	1.65	>0.05
Obsessive-compulsive	1.882±0.598	1.72±0.59	2.28	<0.05
Interpersonal sensitivity	1.719±0.607	1.56±0.49	2.52	<0.01
Depression	1.607±0.57	1.48±0.43	2.73	<0.01
Anxiety	1.490±0.555	1.34±0.45	2.38	<0.05
Nostility	1.578±0.517	1.46±0.47	1.87	=0.05
Phobic anxiety	1.329±0.45	1.22±0.43	1.98	<0.05
Paranoid ideation	1.482±0.514	1.4±0.47	1.3	>0.05
Psychotism	1.491±0.443	1.31±0.36	3.58	<0.01
Others	1.62±0.577	1.45±0.55	2.39	<0.05

The results of the research indicate that the group of exercising qigong for more than two years is lower than the group exercising qigong for less than two years on total scores, numbers of positive items, average positive items and ten factors scores. Statistic test gets remarkable level except somatization and paranoid ideation.

The research results indicate that the longer people practise qigong the better their mental health is.

II. The role of qigong on type A behavior pattern

I studied the qigong group and the control group by a questionnaire of type A behaviour pattern. There are 89 cases in the qigong group and 144 cases in the control group.

My research results indicate that:

1. The qigong group's percentage of type A behaviour pattern is 22.43 percent. The control group's percentage of type A behavior pattern is 51.39 percent. The qigong group's percentage of type A behavior pattern is remarkably lower than the control group.

2. Taking 30 scores as the standard, χ^2 test of the result of qigong and the control group indicate that $\chi^2=17.05$, $P<0.001$. The difference is remarkable.

3. The average and standard of the qigong group is 24.517 ± 8.516 .

The average and standard of control group is 29.813 ± 7.696 .

The test of average of qigong and control group indicates that $t=4.784$, $P<0.01$. The difference is remarkable.

According to my research results, I think, sticking to qigong is helpful to change type A behavior pattern.

II. The role of qigong on symptoms of psychosomatic disorders

I have designed a questionnaire of 40 problems to see the role of qigong on symptoms of psychosomatic disorders. The effect of qigong on these symptoms is divided into six grades. Qigong makes the symptoms much heavier, heavy, no change, light, much light, disappearance.

I investigated 100 cases of psychosomatic disorders, including coronary heart disease, hypertension, gastric ulcer and neurasthenia, etc. They all exercised qigong. They only answered some items about the symptoms they had. These 100 cases were divided into two groups: the first qigong group practising qigong for more than two years and the second for less than two years.

The Research results indicate that:

1. The curative effect on the symptoms of psychosomatic disorders is from 50 percent to 80 percent.

2. The curative effect of qigong on most items of psychosomatic disorders symptoms is from 20 percent to 45 percent.

3. The curative effect rate and cure rate on most items is higher in the first group than the second group.

I also studied 33 cancer patients by the aforesaid questionnaire. I got the similar results.

According to this research, I think, qigong has a good curative effect on psychosomatic disorders.

1—29 A SURVEY OF INTERRELATION BETWEEN QIGONG CONCERNING 1-23 FACTORS OF INTELLIGENCE AND PERSONALITY IN YOUNG PEOPLE

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The aim of the experiment is to survey if qigong gives influence on factors of intelligence and personality of young people.

Method: The experiment surveyed two groups of students in the Beijing College of Traditional Chinese Medicine who had done qigong exercise or not during one year with the Raven's Standard Progressive Matrices (SPM) and Edwards' Personal Preference Schedule (EPPS) for two times.

Result: As to SPM, the difference of scores between the two groups were not remarkable whether from self-contrast survey of EPPS of the group who had not practised qigong, the scores of the third item (ORD) were higher obviously (first time 13.181 ± 4.838 , second time 15.394 ± 3.733 , $p < 0.05$) and the seventh item (INT) was lower remarkably (first time 16.788 ± 5.561 , second time 14.697 ± 3.748 , $P < 0.05$), and the difference of other surveys were not remarkable.

Discussion: According to the survey of SPM, it shows that qigong can't influence the logic thinking capacity of young people. As to the survey of EPPS, the second group was higher in ORD and lower in INT but the first group did not make such changes. It shows that qigong can stabilize some factors of personality of young people.

1—30 INFLUENCE OF QIGONG FOR INTELLIGENCE ON UNIVERSITY STUDENT MEMORY

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Seventeen university student volunteers took part in the qigong exercises and experiments.

Observations one month before and after qigong practice were compared and handled by statistical management. There was significant difference. The results showed that:

- (1) Those who had seriously practised qigong improved their memory in various aspects (direction, numerals, order, etc.).
- (2) Memory of various fields was improved, lasting for 24 hours and more.
- (3) It not only indicated that the memory was improved after each time's practice of qigong,

but also had its significance when the improvement was applied to "stress reaction".

(4) The qigong sets employed can really improve student memory, easy to learn and popularize.

1—31 A STUDY OF THE BIOLOGICAL EFFECT OF THE EMITTED QI ON MICROBE

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The emitted qi was produced to act respectively on prokaryote-Staphylococcus aureus, Pseudomonas aeruginosa and Bacillus cereus, eukaryote — saccharomyces sp. and biological big molecules — seven pectin enzymes. After 13 times of repeated experiments, the physical property of the emitted qi was proved from the following aspects.

Firstly, Staphylococcus aureus was treated by it for 8 minutes, the lethal rate was 76%, 1.29 times as effective as that of the bactericidal rate of 2% carbolic acid in equal time.

Secondly, it had different lethal influence on different bacteria. For example, the lethal rate on Bacillus species was 41.9%, while on non-Bacillus species was 72.9%. The former was lower than the latter. It was also different in microbe's different growing period. For example, the lethal rate on vegetative cells of Bacillus cereus is 50% (mean of 4 times' experiments) and it was 41.3% with regard to the resting spore.

Thirdly, it had lethal influence on not only prokaryote but also eukaryote. For example, the lethal rate on Saccharomyces carlsbergensis was 34%.

Fourthly, it could lead to changes of the resistance of Staphylococcus aureus, Pseudomonas aeruginosa to 22 different kinds of medicines.

Fifthly, it had obvious influence on pectin enzyme activity.

Sixthly, it could act through some glass obstacles, which showed its strong penetration and direction.

In brief, the biological effect produced by the emitted qi on microbe is much similar to that produced by physical and chemical factors. Therefore, the identification of the physical property of the emitted qi is reliable and convincing.

**1—32 A COMPARATIVE STUDY OF THE EMITTED QI AND
PHYSICAL — CHEMICAL FACTORS ON THE PROTO-
PLASMIC MUTAGENESIS OF MICROMONOSPORA
ECHINOSPORD**

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Micronomicin is a new antibiotic. People are getting interested in it for its low poisonousness. Since its fermented liquid only consists of 69% micronomicin, the cycle of post-preparation is long with high cost, restriction in popularisation is imposed. We have proved, the materiality of the emitted qi; we used UV—8MOP, laser and the emitted qi to treat the protoplast of micronomicin-producer. The ultraviolet light in the presence of 8-methoxypsoralen (8—MOP) was used to inactivate and mutate the protoplast, irradiating for 30 sec. 60 sec. 90 sec. and 120 sec. respectively, and the death rate after treatment was 13.7%, 66.7%, 82.4% and 85.6% respectively; 5mJ and 8mJ of laser was used to mutate the protoplast, and the death rate after treatment was 83.7% and 87.6%.

The emitted qi was used to treat the protoplast for 5 min and 8 min, the death rate was 91.67% and 85.5% respectively. The differentiation of the regeneration strain was also different. After treatment by the emitted qi the differentiation was the more obvious than others, and its positive mutation was the highest in the three methods, the GMC2b content of UQ—5—32 mutant strain was 75%.

We can conclude that the emitted qi has these features: ability of killing microorganism, ability of changing strains properties. The emitted qi can be applied to industrial breeding.

**2 1—33 THE REPEATED EXPERIMENTS BY USING THE EMIT-
TED QI IN TREATMENT OF SPINAL CORD INJURY**

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18 small test pigs were used in this study. They were divided in three groups (Group A, B, C). Spinal cord injury was made by the Allen's method with straight drop strength 400gcf (50×80cm). Group C was the control group. The clinical effect of treatment and its mechanism were observed in the acute stage of spinal cord injury treated by the Ba Gua Induction

Qigong 2-3 times per day. After 89 days treatment, the paraplegic pigs in Group A all could walk, the nervous function recovered to some extent. The nervous function of 83% of the pigs in Group B were recovered. Not any one in Group C could stand. The result showed obvious difference ($P < 0.01$). The autopsy revealed that the degree of paraplegia was proportional to the atrophy and adhesion of spinal cord. This study proved that the Ba Gua Induction Qigong could produce a biological effect in regulating qi and blood, as well as the meridians. It can improve the regional circulation, remove blood stasis with calm and analgesic effect. In conclusion, the Ba Gua Induction Qigong has good effect on ESCI.

1—34 MODIFIED EFFECT OF THE EMITTED QI ON CLOSE-OPEN KINETIC PROCESS OF SODIUM CHANNELS OF RAT CULTURAL NEURON CELL

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The action of the emitted qi was tested on axon diaphragmatic and culture neuron cell of rat by using the voltage clamp and patch clamp technique in electrophysiology. The excitable activity of the emitted qi was determined by the single sodium channel. The results are summarized as follows.

1. Under the condition of the voltage clamp, holding potential = -50mV , $V_m = -10\text{mV}$, the peak inward sodium current $I_{Na} = -0.46 \pm 0.02 \text{ uA} \cdot \text{cm}$ when the emitted qi was applied to the left or right hand at a distance, 0.5 m for 12 min . $I_{Na} = -0.70 \pm 0.01 \text{ uA} \cdot \text{cm}$. The peak of sodium current increased by about 40%, the control was by about 2.7%.

2. The sodium channel of culture neuron had one type of magnitude. Single channel currents had conductance of $10.6 \pm 0.01 \text{ pS}$ in normal. The open-time of the sodium channel was usually $2.1 \pm 0.02 \text{ ms}$. When the emitted qi was applied directly to the culture neuron membrane with the hand at a distance 0.5 m for 14 min , conductance of $16.7 \pm 0.02 \text{ pS}$. The open-time of the sodium channel increased by the emitted qi was not modified.

1—35 SPECTRUM ANALYSIS EFFECT OF THE EMITTED QI ON EEG OF NORMAL SUBJECTS

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It is still a disputable question if a qigong master can emit qi to influence others without any psychological suggestion. The spectrum analysis is a mature technique for the study of brain function. In these experiments the EEGs of a qigong master and subjects were synchronically recorded, and one qigong master and twelve normal subjects took part in the ex-

periments. By means of designed program the effects of psychological suggestion of the subjects were prevented. An imitator group was included that the subjects received the imitator "qi" from other people. The spectrum analysis of EEG was done by a computer on line. Two samples were made before emitting qi and averaged.

The results showed that when subjects receiving qi and four were made emitting qi, the changes of EEG took place mainly in the beta frequency segment, and the power of beta segment was higher than that of the control. The increases were statistically significant if Fp2, C3, C4, O1, and Pz, five points of beta1 segment and in C3 and C4, two points of beta2 segment, $P < 0.05$. The power of EEG of the qigong master in the beta segment also increased when he was emitting qi, and apart from C4 and Pz points in beta1 and C4 point in beta2 segment, the increases in all other points were statistically significant. In the imitator group, there was no obvious change in the power of EEG in the beta segment when the subjects received qi from other people imitating qigong masters.

Similar changes of power in the beta segment of EEG that took place in both the qigong master while emitting qi and subjects when receiving qi suggested that the qigong master had somehow influenced EEG of subjects. The mechanism and significance of these phenomena are unclear yet and further studies are needed.

1—36 QIGONG' S SUGGESTIVE EFFECT SEEN IN EEG

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Qigong has been already well-known in Japan. The effect of the emitted qi and hypnosis are caused by suggestion. Sixteen channels of electroencephalograms (EEGs) during the emission of qi and hypnosis were studied. Three Chinese qigong masters and three healthy Japanese subjects and a Japanese hypnotist and six receivers worked together. A double-blind test was adopted, so the qi-receivers, as well as the researchers, could not know the time when the qigong masters emitted their qi.

I have previously reported that during the emission of qi (1) The α waves of the qigong masters appeared on the frontal area. (2) Those frontal α waves synchronized with the occipital α . (3) The β waves showed the specific pattern on the topography, and (4) These changes in the EEGs of the qigong masters appeared as similar changes in the EEGs of their subjects.

Under the double-blind test conditions, no clear synchronized changes were found in the

β waves . However, the effects of (1) and (2) were observed clearly in all receivers. During hypnosis led by means of non-verbal method, the β waves of the subjects still appeared on the linguistic area. These results indicate that hypnosis is the verbal suggestion at all, while qi is not a so-called placebo, but something that can be transmitted transpersonally.

1—37 THE EFFECT OF QIGONG ON EXPERIMENTAL INFLAMMATION AND NEUTROPHIL CHEMILUMINESCENCE

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In order to evaluate the possible role of qigong in treatment of some inflammatory diseases, the effect of qigong on the experimental inflammation (paw edema) and neutrophil (PMNs) chemiluminescence (CL) were studied.

Wistar rats , weighing 200—250g were used in this investigation. The paw edema was produced by an injection of 0.1ml of a 1% suspension of carrageenin in 0.9% saline into the hind paw. The length round the paw was determined six hours later. PMNs were isolated from the peritoneal cavity of glycogen treated rat. The CL system consists of 5×10^6 PMNs, 0.1ml of 0.1mM luminal and 1mg of opsonized zymosan . The CL reading was determined by a Biological Chemiluminescence Instrument.

The results showed that (1) Qigong could inhibit carrageenin-induced paw edema. The increased length round the paw (ILRp) in the qigong group was 0.557 ± 0.035 cm ($n=26$, $P < 0.01$), and was similar to the hydrocortisone group (0.206 ± 0.028 , $n=26$) (2) Qigong could stimulate PMNs CL in vitro. The CL reading in the qigong group increased from 168.7 ± 16.2 ($n=22$) to 236.3 ± 23.5 ($n=22$, $P < 0.01$).

Neutrophil (PMNs) is an important inflammatory cell. PMNs activation and products (lysosome enzymes and oxygen free radical) may play an important role in the pathogenesis of acute inflammatory reaction. In the present study, we have found that qigong can prevent the development of carrageenin-induced paw edema and stimulate PMNs activation in vitro. The possible mechanism of the qigong effect is very complex and will be studied in future.

1—38 PROTECTIVE EFFECT OF THE EMITTED QI ON THE PRIMARY CULTURE OF NEUROCYTES IN VITRO AGAINST FREE RADICAL DAMAGE

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This paper reported the protective effects of the emitted qi on cultured neurons damaged

by free radical . The neuronal cell's suspension was made with the cerebral cortex of Wistar O-day newborn rats and it was cultured in dishes. At 8th--day postplating, the dishes were divided into 3 groups, i. e. the emitted qi group, damaged group and normal control group. The neurons of the first two groups were injured by hydroxyl free radical generated in the ascorbic acid system. We observed that the brightness of the somatic margin in the damaged group turned from bright to dark, the volume of neuronal somata increased, the number of neissl body decreased, the effusion of LDH increased and GSH-Px activity changed obviously. These evidences indicated the neurons in the damaged group had swelling or degenerating. But in the emitted qi group, the effusion of LDH was less than that of the damaged group. Both groups showed an obvious difference ($P < 0.01-0.001$), GSH-Px activity changed a little. The results show that the emitted qi may act as a scavenger of hydroxy radical and protect the nerve cell membrane.

1—39 THE EFFECT OF THE HUMAN ENERGY FIELD UNDER THE QIGONG STATE ON THE STRUCTURE AND FUNCTION OF RED BLOOD CELLS IN EXPERIMENTAL RATS WITH BLOOD STASIS

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Qigong is newly recognized by people as a modern medical means to be used for prolonging life and enhancing the human immune function. Especially, it has a particular action for treating chronic, difficult and complicated cases. The action of drugs on organic microcirculation was reported before in medical literature, but the effect of the human energy field under the qigong state on the structure and function of the erythrocyte membrane has not been reported yet. Through the investigations of the human energy field phenomenon, Inyushin put forward an energy stroma model about the human energy field according to many books written by researchers. This stroma model constitutes the stroma structure which can make organisms exist. Some methods developed from this energy stroma model are now used in medical treatments. The experiments made by our office before have proved that the human energy field under the qigong state can improve blood rheological property of rats with blood stasis. Researching results show that the human energy field under the qigong state has the action of protection of red blood cell structure and function in animals with blood stasis, and that the content of red blood cells and peroxide lipid of liver tissue can be reduced, sialic acid content of the erythrocyte membrane can be recovered. Thus, it follows that the human energy field under the qigong state can relieve or prevent organism cells from free radical damage, and that the human energy field released by qigong doctors can, to some extent, regulate disordered organism. But the protection of membrane protein structure damage is not good. We

have used animal models with blood stasis to observe the change of symptom due to blood stasis, and then to observe the action of the human energy field under the qigong state on red blood cell membrane, and finally to research into the mechanism of the human energy field regulating organic metabolism.

1—40 ANALYSIS OF THE EFFECT OF THE EMITTED QI ON HUMAN HEPATOCARCINOMA CELL (BEL-7402) BY USING FLOW CYTOMETRY

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Based on our previous studies of the cellular effect of the emitted qi on human hepatocarcinoma cell (BEL-7402) in this experiment, the state-of-the-art technique of flow cytometry (FCM) was employed to analyse the influence of it on BEL-7402 from the angles of cell division, kinetics and genetics.

Repeated results indicated that the emitted qi treatment inhibited the higher rate of DNA synthesis in BEL-7402 and decreased the concentration of DNA. Meanwhile, the cell cycle of BEL-7402 was correspondingly altered. G0, G1, G2 phases became more obvious by repeated treatments, but S phase appeared to be smaller. After the emitted qi treatment, chromosome karyotype changed too. These results demonstrated that the BEL-7402 cell could be restored to the normal to some extent by qigong action. For the further confirmation, naked mice was inoculated with BEL-7402 and the treated cell respectively, and it was surprisingly observed that the tumour was only induced in the naked mice inoculated with BEL-7402, whereas naked mice with qigong treated BEL-7402 grew well. This result was further evidenced by the FCM analysis of cells isolated from in situ tissue.

1—41 THE EFFECT OF THE EMITTED QI ON AGGLUTINATING REACTION OF HUMAN PULMONARY ADENOCARCINOMA CELL (SPC-A1) MEDIATED BY CONA

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Intercellular recognition and contact inhibition are the main characteristics of the cultured animal cell, which usually appear as agglutinating reaction mediated by some plant lectins, such as ConA. It has been proved that there is close relationship between the agglutination and glycoproteins on cell membranes. The sort and distribution of glycoprotein as well as its interaction with relative receptors can influence the agglutinating reaction. In general, normal cells expresses less degree of agglutination than tumour cells. Therefore, in this experiment, we used SPC-A1 cells as the material, and the effect of the emitted qi on cell recognition me-

diated by ConA was studied. Mechanisms involved in the cell recognition, such as cell membrane-bound glycoprotein and receptors were also investigated.

It was found that the emitted qi treatment reduced the extent of agglutination, and this effect became more obvious with increasing times of treatment. Meanwhile, the forms of glycoprotein on cell membranes were also changed, displayed on a SDS-PAGE, developed by the specific Schiff's staining method, among which some bands disappeared and others emerged. This variation may play some role in the process of cell recognition. When the FITC labeled ConA was used as a fluorescent probe to detect ConA "receptor" change in situ with the FCM technique, it was further observed that the amount of ConA "receptor" decreased and its distribution was also changed. These results may partially account for the reversion effect of qigong on SPC-A1 cell.

1—42 INHIBITION OF HUMAN NASOPHARYNGEAL CARCINOMA CELLS IN VITRO BY THE EMITTED QI AND γ -RAY

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Using human nasopharyngeal carcinoma cell line (CNE-2) as the target cell, the cells were planted into 96 well plastic microcultured plates, 50 cells per well, one plate as a group. There were 4 groups: the control (c), irradiated by 2Gy γ -ray (R), treated by the emitted qi (Q), and treated by both of them (R+Q). After two days culture, the cell clone (≥ 8 cells) under an inverted microscope was observed and counted. The mean value of cell clone ($\bar{X} \pm S.D.$) in the R+Q group was 9.2 ± 2.5 , markedly lower than the R group (15.8 ± 2.4). There was a marked statistical difference ($P < 0.001$). The kinetic study showed that the Q group at 48 h. the level of mean value of cell clone (16.5 ± 2.2) approached to the R group. Afterwards it went up again apparently. However, the R group continuously decreased through 48-96 h. The emitted qi alone was able to kill or damage the CNE-2 cell in vitro, but this action seemed to be higher reversible than arising by irradiation of γ -ray.

1—43 A PRELIMINARY STUDY OF THE EFFECT OF THE EMITTED QI ON EXPERIMENTAL ANIMALS INFECTED BY PNEUMOCYSTIS CARINII

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Pneumocystis carinii (P. Carinii) has emerged as the leading opportunistic pathogen and

a major cause of mortality in AIDS. *P. carinii* and AIDS have been attracting the interests and attention of many researchers all over the world. Studies of *P. carinii* by many methods and different ways have important significance. The paper reports for the first time the effect of the emitted qi on *P. carinii* infected Wistar rats.

I. Adult female Wistar rats weighing 150-200g were divided into A(26), B(28), C(26) groups randomly. Group C was the control one.

Two qigong masters emitted their qi to Groups A and B for 15 minutes each time once every other day, 7 times altogether. Then *P. carinii* Pneumonia animal model was built up by a regular method. The rats received a standard treatment regimen of cortison acetate. 25 mg, injected subcutaneously twice a week, low protein(7%) diet, and tetracycling in rat's drinking water until examination. After drug treatment started, the rats were treated by the emitted qi for one week. They were examined 4-8 weeks after the drug treatment.

The experimental results suggested that the body weight of the 3 groups decreased, but this was more obvious in the control group. Table 1 shows the difference of the infected rats among the three groups. About the *carinii* infection rate see Table 1.

For differentiation of infected degree, see Table 2. It shows the difference of the infected degree of *P. carinii* among the three groups.

Table 1. Infected rate of *P. carinii*

group	counts	PC(+)	rate of infection	X ² test
A	26	17	65.4	A + B P > 0.05
B	28	14	50.0	B + C P < 0.01
C	26	24	92.3	A + C P < 0.01

Table 2. Difference of infected degree

group	counts of PC(+)	infection degree		
		heavy	moderate	light
A	17/26	1	9	7
B	14/28	3	1	10
C	24/26	12	10	2

The lung smears from the three groups were stained by Giemsa. It was found that the parasites were the typical *P. carinii*. Table 3 shows the differences of the sizes of *P. carinii* cyst among the three groups.

Table 3. Differences of sizes of *P. carinii* cyst

PC from	counts	diameter(X, μ)	SE	t test
A	100	4.78	0.6518	A + B P > 0.05
B	100	4.98	0.4980	B + C P > 0.05
C	100	4.74	0.5326	A + C P > 0.05

The experimental results suggest that the emitted qi reduces the infection rate and degree of Wistar rats by *P. carinii*. The emitted qi can inhibit the infection of *P. carinii*.

II. Nude mice were divided into two groups. Group A (10) was injected of $5-8 \times 10^{-2}$ parasites by lung innocubation. Group B were injected of parasites which had been treated by the emitted qi. The parasites were put into a small glass. A qigong master emitted his qi to the parasites 20 minutes and altogether 4 times. Each interval lasted for 48 hrs.

The experimental results showed that 10 mice of Group A were infected by PC, in which 4 mice were of moderate infection degree, but in Group B only 6 mice were infected by PC, and all were of light infection degree. Two groups had big difference.

1 — 44 THE DOUBLE-BLIND TEST OF THE EMITTED QI ON TUMOR FORMATION OF A NASOPHARYNGEAL CARCINOMA CELL LINE IN NUDE MICE

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Following the double-blind method, we carried out two experiments by using cell culture and nude mice. In the first experiment, a qigong master treated the poorly differentiated nasopharyngeal squamous cell carcinoma cell line (CNE-2) with his emitted qi, followed by the inoculation of the treated cell (qigong group) and the untreated cells (control group) into 16 female nude mice (NC-Z strain mice). The results showed that the tumor formation of the treated cells was inhibited by an impressive rate of 100% (3/3). The same procedures were followed in the second experiment. The results demonstrated that the inhibiting rate was still 100% (4/4). A pathological examination further confirmed that there were no tumor cells in the inoculating site of the qigong group, whereas poorly differentiated squamous cell carcinomas were observed in tumor of the control group. No tumors were found in the livers and lungs of the mice in the qigong group. But in the control group of the first experiment, tumors metastasized to the lung in mouse 2. No tumors were found in the liver of mice in the first experiment or in the livers and lungs of the other mice. Although the mechanism of the effect of the emitted qi still remains unknown, the results of the present research reveals the necessity as well as the possibility of further investigating the inhibition of tumors and its mechanism.

1—45 AN EXPERIMENTAL RESEARCH OF THE INFLUENCE OF THE EMITTED QI ON CANCER GROWTH, METASTASIS AND SURVIVAL TIME OF THE HOST

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In researches of the influence of the emitted qi on cancer growth, metastasis and survival time of host, 114 animal cancer models were used in three batches. Tumor models were formed in mice by transplantation of U27 or MO₄ cancer cells into subcutaneous tissues of the right armpit respectively. These mice with cancer cells were divided randomly into the qigong group and control group and all mice of the two groups were fed with same food. From the second day or seventh day after transplantation of cancer cells, the mice of the qigong group were treated for 10~30 minutes with the emitted qi every day, but the mice of the control group were not given any treatment. In experiment 1, on the 20th day after transplantation of cancer cells, all mice of the two groups were killed and all tumor volumes were measured individually. In experiment 2, on the 23rd and 33rd day after transplantation of cancer cells, all mice of the two groups were killed and all armpit lymph nodes and lungs were taken out individually and examined histopathologically. In experiment 3, when the mice of the two groups died, their survival time after transplantation of cancer cells was calculated respectively.

The following results were found:

1. In experiment 1, the average tumor volume of the qigong group (31 mice, $2.25 \pm 5.35 \text{ cm}^3$) was obviously lower than the control group (32 mice, $6.32 \pm 10.02 \text{ cm}^3$), $p < 0.001$.
2. In experiment 2, the metastatic rate (1/16) of lymph nodes in the qigong group was significantly lower than the control group (6/15), $P < 0.05$.
3. In experiment 3, the average survival time (35.4 d) of mice with cancer in the qigong group (10 mice) was obviously longer than the control group (10 mice, 30.5 d), $P < 0.002$.

These results indicate that the emitted qi can delay cancer growth, reduce metastatic rate and prolong the survival time of mice with cancer.

1—46 THE EMITTED QI ON MICE TUMOR PREVENTION AND TREATMENT

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Through random division, we had 30 mice divided into three groups: the tumor control group (I), qigong protective group (II) and qigong protective and treating group (III) to look into the use of the emitted qi in tumor prevention and treatment. Before transferring tumor,

the emitted qi had been used for two weeks to protect tumor from growth in the second and third groups. After transferring tumor, the emitted qi was given for another two weeks to the third group to treat tumor. Mice of the three groups were killed at the same time. The change of the body weight, spleen, thymus, tumor net weight were measured. The result showed the emitted qi decreased the incidence of tumor. Even though the tumor has developed, persistent emitted qi could inhibit tumor growth. Short duration of emitted qi treatment had little effect on body weight, spleen and thymus, etc. It indicates that the emitted qi can inhibit tumor growth directly.

1—47 THE CURATIVE EFFECT OF THE EMITTED QI ON MICE WITH MO₄ TUMORS

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EXPERIMENTS

Experiment 1

Seventeen male mice were injected intraperitoneally with 1×10^5 MO₄ cells in 0.2 ml serumfree culture medium. The mice were divided randomly into two groups (the treating group and control group). Since the second day after implantation of MO₄ cells, the mice of the treating group were treated every day for 30 minutes by the emitted qi given out through the hands of qigong doctor Shen Hongxun. The distance between the mice and the hand was 15 to 20 cm.

The control group was not given any treatment. The mice of the two groups were kept on the same standard pellet diet and tap water ad libitum. The time of death of the mice was noted down and all the dead mice were autopsied and the volume of the tumor was measured.

Experiment 2

Seventeen female mice were injected intraperitoneally with 1×10^5 MO₄ cells in 0.2 ml serum culture medium. The mice were divided randomly into the treating group and control group. On the seventh day after implantation of MO₄ cells the treatment was started and the curative method and examination were the same as in the 1st experiment.

Experiment 3

Twenty female mice were injected subcutaneously into the right axilla with 1×10^5 MO₄ cells in 0.2 ml serum-free culture medium and then the mice were divided randomly into the treating group and control group. On the seventh day after implantation of MO₄ cells, the tumor could be touched and the treatment was started. The curative method and the examination were the same as in the 1st experiment.

RESULTS

In experiment 1 and 2 all mice died within 28 days and all dead mice showed intra-abdominal tumor and haemorrhagic ascites. Most of the tumor nodes and the haemorrhagic ascites were collected and their volume was measured individually.

In experiment 3 the mice of the control group died within 34 days, but the mice of the treating group lived longer. The tumor localized under the skin and some tumor had invaded into the pleural cavity. The tumor volume was measured individually according to the formula: $V = a \times b^2 \times 0.4$. V is the tumor, a is the long diameter of the tumor, b is the perpendicular short diameter of the tumor.

Through statistical analysis we found that in experiment 1 and 2 the volume of the intra-abdominal tumors had a significant difference between the treating group and the control group (in experiment 1, $p = 0.0024$, in experiment 2, $p < 0.000$) but the survival period and the volumes of the bloody ascites did not have a statistical difference between the treating group and the control group.

In experiment 3 by statistical comparison, we found that the survival period and the average tumor volume per day had significant difference between the treating group and the control group (P survival time $= 0.02$, p tumor volume $= 0.012$), but the end volume of the tumor did not have any significant difference 0.105.

1—48 A RESEARCH ON THE EMITTED QI'S EFFECT ON THE IMMUNE STICKING FUNCTION OF RED BLOOD CELLS TO TUMOR CELLS

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Using tumor red blood cell garlands as an observing index, this paper reports the emitted qi's effect on the immune sticking function of mice's red blood cells to tumor cells. We have found that, firstly, mice's red blood cells and moxa ascites cancer cells can form tumor red blood cell garlands; secondly, the average rate of tumor red blood cell garlands of the mice influenced by the emitted qi was 31.68 ± 6.19 , while that of the control mice was 26.44 ± 1.43 . The difference was 19.82%. After we handled the research result with the statistic method, we got $P < 0.01$, which proved that the emitted qi helped to promote and increase the immune sticking function of mice red blood cells to tumor cells. This might imply the emitted qi can help red blood cell membrane complement and receptor form garlands after its reaction with tumor cells. This is a new field of tumor immunology which indicates a new direction to the treatment of tumor. The examination of red blood cell immune activity index has great referential value to the observation of patients' immune state, judgement of qigong treatment effects and indication of disease prognosis.

1—49 THE EFFECT OF THE EMITTED QI ON THE CHANGE OF ANTIBODY DEPENDENCE CELL-MEDIATED CYTOTOXICITY(ADCC)OF K CELL OF MICE CAUSED BY INJURY OF THE LEFT AND RIGHT BRAIN CORTEX

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This paper reports after the injury of left and right brain cortex on the ADCC function of the K cell of mice, our observation of the effect of the emitted qi on the change of the ADCC of the K cell of mice. It was a mechanical injury. The tissue-section results showed broken brain cortex of mice, the nerve cell liquifaction necrosis, phagocyte infiltration, a light hyperplasia of nerve glia cell. It proved that the models were really injured in the brain cortex. The cortex injury of the left and right brain caused the change of the ADCC activity; the left brain cortex injury caused the obvious reduction of the ADCC activity ($P < 0.001$); the right brain cortex injury caused the increase of the ADCC activity ($P < 0.001$). It showed that the injury of the brain cortex really caused the change of the ADCC activity. On this basis, we observed the adjusting effect of the emitted qi on the change of the ADCC activity. We have found the emitted qi has the recovering function on the reduction of the ADCC activity caused by the left brain cortex injury ($P < 0.001$), and it has the reduction action on the increase of the ADCC activity caused by the right brain cortex injury ($p < 0.001$). These show that the emitted qi can adjust the imbalanced state of the ADCC activity caused by the left and right brain cortex injury to the balanced state in two ways.

1—50 THE ADJUSTING EFFECT OF THE EMITTED QI ON THE IMMUNE FUNCTION OF COLD-STRESS MICE

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In this experiment, NIH mice were divided into three groups randomly—(1) the normal control group, (2) the stressed control group (Mice underwent 5 min of $14^{\circ}\text{C} \pm 1^{\circ}\text{C}$ /day cold stress exposure for 8 days), (3) the qigong groups (besides cold-stress, mice received emitted qi 30 min/day for 8 days). Then, the index of thymus, spleen and brain were detected, T cell, B cells proliferation and the RDCC activity of K cell were used to investigate the immune adjusting effect of the emitted qi on cold-stressed mice. Our study demonstrated (1) The T, B cell proliferation rate of the stressed mice (10084 ± 549 ; 5074 ± 499) was obviously

lower than that of the non-stressed mice (18270 ± 1069 ; 13704 ± 855) $p < 0.01$, but the T, B cell proliferation of the qigong group (23582 ± 1959 ; 14601 ± 900) was obviously higher than that of the stressed mice group ($p < 0.01$). (2) The activity of K cell RDCC of the stressed mice (0.128 ± 0.004) was obviously lower than that of the non-stressed mice (0.459 ± 0.007 , $p < 0.001$), but the emitted qi can enhance the RDCC activity of the stressed mice (0.505 ± 0.001 , $p < 0.001$). (3) In cold stress environment, the immune organs (thymus and spleen) of mice were atrophied more significantly (3.57 ± 0.64 ; 4.76 ± 0.75) than the non-stressed mice (4.28 ± 0.63 ; 5.67 ± 1.06 , $p < 0.01$), but the emitted qi can alleviate the injury of the thymus and spleen (4.10 ± 0.49 , $p < 0.01$; 5.22 ± 1.06 , $p > 0.05$). (4) The weight of brain of the stressed mice were lighter (20.6 ± 1.5) than the non-stressed mice (22.0 ± 1.4 , $p < 0.05$), but the emitted qi can increase the brain weight of the stressed mice (22.2 ± 1.5 , $p < 0.01$).

1—51 AN OBSERVATION OF THE EFFECT OF THE EMITTED QI ON THE GROWTH OF MICE

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In this experiment, we have observed the effect of the emitted qi on the growth of mice. As a comprehensive factor of physical, chemical and biological functions, the emitted qi can both cure diseases and strengthen health, but can it promote the growth of creatures? In order to find out the answer to the question, we are among the first people who do research on this subject.

We have observed the growth of over 60 mice and got satisfactory results. The body length of the test mice is averagely 10.26cm, while that of the control mice is 9.86. The difference is 0.4cm. The length of the test mice's hind legs is 3.33cm, while that of the control mice is 3.23cm. The two results are statistically significant ($p < 0.05$). Meanwhile, we have determined the amount of growth hormone in mice's serum with the isotope method. In the four experiments, the amounts of the test mice were all higher than those of the control ones by 0.81, 2.31, 5.5 and 1.43ng/ml respectively. The difference between these two groups was very distinct ($p < 0.01$). The result shows that the emitted qi can promote the growth of mice's bodies and hind legs and help increase the amount of growth hormone in mice's serum, which implies that the emitted qi can promote and help the growth of creatures; and that offers biological proof to the actual existence of the emitted qi and provides important information and methods for application and research.

1—52 THE EFFECT OF THE EMITTED QI TO ACUPOINTS ON SOMATOSENSORY EVOKED POTENTIAL RECORDED FROM THE CORTEX FOLLOWING ZUSANLI (ST36) STIMULATION IN CATS

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The paper has observed the effect of the emitted qi to Zusanli (St36) on the somatosensory evoked potential (SEP) recorded from the cerebral cortex following Zusanli (St 36) stimulation in cats.

The experiments were performed on 21 adult cats, anesthetized with a single dose of 1% chloralose (70mg/kg). Cats were fixed on a stereotaxic table in a shield room. A general craniotomy was performed over the frontal pole to expose the cortex. Zusanli (St 36) on both feet were stimulated by the concentric circles electrodes in order to prevent the diffusion of the stimulation. A monopolar, silver ball (0.5mm diameter) acted as the recording electrode, was set on the surface of the cortex to elicit SEP. The normal control group was measured before the emitted qi, then asked the qigong master to emit qi to Zusanli (St 36) for about 30 min. and recorded the SEP at the same time. The control group was recorded again 30 min after cessation of the emission of qi.

Comparison between the emitted qi group and the control group showed that the amplitudes of the SEP increased in 7 cases (33.33%), decreased in 12 cases (57.14%) and unchanged in 2 cases (9.53%); the latencies were prolonged in 5 cases (23.81%), shortened in 9 cases (42.86%) and unchanged in 7 cases (33.33%). The average value of all experimental data were listed in the table, expressing that the amplitudes of SEP were inhibited by the emitted qi. There were significant statistical difference in P16 & P40 waves of them, and the latencies were shortened but no significant change.

Table: Effect of the emitted qi to acupoint on somatosensory evoked potential in cats

		(mean±SE)		
Waves		P16	N27	P40
before	(ms)	16.90±0.27	27.63±0.55	41.04±0.65
	(μv)	9.50±0.37	32.30±1.36	60.20±2.73
emitted	(ms)	16.76±0.34	26.70±0.60	39.71±0.77
	(μv)	8.05±0.29 * *	29.44±1.26	51.75±2.63 *
after	(ms)	16.96±0.31	27.18±0.59	41.00±0.98
	(μv)	8.78±0.52	30.38±1.32	57.16±3.76

ms. ,latencies; μv. ,amplitudes; * P<0.05, * * P<0.01 compared with before

It is often used one of the methods that activity of evoked potential was recorded from a special place on the cerebral cortex following one point stimulation on the body to study the mechanism of the medicine. According to each wave origin of the SEP, primary responses in 20ms are generated in the thalamocortical axons and the primary somatosensory areas of the ipsilateral cerebral cortex, the second responses in 20—38ms generated the second somatosensory areas and the callosal areas, the late responses 38ms generated in the contralateral hemisphere and wide-ranging cerebral cortex. Accordingly the amplitude of the SEP reflects the area size of the depolarization and the quantity of excitational neuron and the latency reflects the velocity and the distance of the signal to be conducted. The experimental results suggest that the quantity of the nervous activity reduce in the cerebral cortex and the somatosensory pathway, but the quality and the conduction of their function that take part in the excitation rise after the animals received the emitted qi. The phenomena are so much similar to qigong meditation.

1—53 BASIC EXPERIMENTS OF ACTIVATION OF SEED GERMINATION AND GROWTH WITH THE EMITTED QI AND ANALOGOUS INSTALMENT OF THE EMITTED QI

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The basic experiments of activation of seed germination and growth were conducted by three Japanese qigong masters (all of the chief instructors of the Japanese Qigong Association). In addition, an analogous instalment of the emitted qi was applied to this purpose. The message of the emitted qi had been recorded on the data recorder and the qi was emitted by Japanese qigong masters who cured chronic diseases with it.

The invited qigong masters emitted their qi towards a certain volume of running water, turning it into the "qi water". Five kinds of seeds were irrigated by the "qi water", running water to observe their germination and growth. Another kind of "qi water" was prepared through the analogous instalment of the emitted qi, named the "analogous qi water". The analogous instalment of the emitted qi worked directly on the seeds too.

The qigong masters emitted their qi to the seeds of cabbage, etc. Except one all seeds showed good result in budding and growth in comparison with the control group. The budding and growth increased by 15% compared with the control group (irrigated by the running water radiated by infrared ray).

Up to now, qigong has contributed a lot to keeping fit and treating diseases. However, our experiments indicate qi is a source of life and it is closely related to the nonrandom of life

process. Further more, qi as a life message activates the life process of creatures (human being, animal, plant and microorganism).

1—54 THE IR STUDY OF HEAVY WATER TREATED BY THE EMITTED QI

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We applied the infrared spectroscope in the research of the effect of the emitted qi on heavy water with the running water as the control. The results showed that under the effect of the emitted qi, the frequency of the stretch absorption band of O-D of ordinary water did not change, while the absorption intensity decreased; in the meantime, the frequency of the stretch absorption band O-H of ordinary water did not change either, but its absorption intensity increased. The research not only discovers the effect of the emitted qi on the IR of heavy water and running water are definitely the opposite, but also proves that the changes of IR are related to the action way of the emitted qi. The rigorous experiments have proved the effect of the emitted qi on heavy water and running water is objectively existing. According to the above results, a preliminary explanation is provided. It is about the effect of the emitted qi on the nonrandom structure of molecules of heavy water and running water.

1—55 THE MATERIAL EFFECT OF MIND AND QI—A RESEARCH WITH THE HELP OF THE LASER LAMAN SPECTRUM ANALYSER

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In order to research the effect of qigong I emitted my qi to water and tested it with an SPEX 1403 Laser Laman Spectrum Analyser, to analyse the structure of water molecule and its vibration. To exclude the influence possibly resulted from distance difference, impurities in water and other elements, distilled water was chosen to be the sample. The background spectrum was obtained in every test. In addition to this, the following experiments were conducted. (1) Heating the sample water to 48°C. (2) Applying strong magnetism to the sample water for 20 minutes. (3) Analogous emission of qi. It was found that the result provided by the Laman Spectrum to the sample water remained unchanged. It can thus conclude that the human body temperature, the magnetic field generated by electronic appliances and the analogous emission of qi have no effect when it is analysed by the Laman spectrum.

However, I emitted my qi at a distance of 20cm, over 4m, 4km (or kkm) to the sample water, changes on the Laman spectrum were seen. It proved that a kind of special energy is re-

leased when qigong was being exercised and that the energy existing in human bodies, besides, the peak of the spectrum varies in different qigong patterns, levels and distance. At the same distance, different results reflected by the spectrum showed that different amount of energy could be generated with different forms of qi emission. The energy produced from the acupoints on meridians is greater. Qi emitted by mind and at a long distance was known as a specific qigong pattern. The change of intensity of the peak of the Laman was greater in comparison of the qigong state. It reveals that only 3—7% cerebral cells are used in normal condition, but under the specific state, the potentials are brought about. Hypothalamus is one of the key nerve centres of the body. The research of the nervous center of systema nervorum automaticum in cerebrum depends on the prolonging or shortening of the vestibule time value. The brain will be equipped with high energy derived from the retrograding effect produced by mind. The key of my emission of qi at a long distance or by mind, lies in the mastering of the knowledge of eight diagrams, integration of man and universe.

Water takes up 65% of the human body. Molecules of water take part in the physiological, biochemical activities. The variation on the Laman spectrum shows the water's response to qigong. Treating patients with the emitted qi and let them drink the "qi" water is to produce the radiating effect of the qigong master. Psychology is the feedback of mind. It will spiral up from physiology to R. Spreng's psychology. The feedback energy can be used to direct further treatment of patients and be applied to agricultural production and scientific experiments.

1—56 THE EFFECT OF THE EMITTED QI ON THE CHEMICAL SHIFT OF ACTIVE PROTON

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In the paper, we observed the effect of the emitted qi on the spectrum of the alcohol and ethanoic acid by HNMR in order to discover the chemical basis of the emitted qi effect.

Thirty experiments showed the qi emitted by strong qigong masters could shift the spectrum peak of active protons but did not effect other peaks. The distance of the peak shift and the continued time depended on the power of the qigong master and the time of the accepting qi. The direction of the peak shift could be changed by the will of the qigong master. In some examples, there were swings in the variation of the peak shift. When a qigong master forms a field, there were also the same variations. Common men and weaker power qigong master could not effect the examples even if the emitted qi lasted for a long time.

The peak shift of the active protons could be considered the variation of the H-bond number in the example solution. The peak shift towards higher field range (right shift) field

(left shift) showed the decrease of the H-bond, otherwise the increase of the H-bonds. If the decrease of the H-bonds was considered the bonds being destroyed by qi, then the increase of the H-bonds should be considered the emitted qi having absorbed partial energy from the solution. This is impossible. So, the abovementioned result cannot be explained by present theories. However, it is sure that the emitted qi effect is objective reality. The variance of the physiology and biochemistry of microorganism, plants and animals and the variances of the structure in biological molecules of all kinds depend on the H-bonds being destroyed and realigned intimately. The reason of the swing in the peak position of the active H waits to be explored further.

1—57 THE EFFECT OF THE EMITTED QI ON THE HIGHER-TEMPERATURE-SUPERCONDUCTIVE MATERIALS

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Some experiments have showed that the emitted qi could produce biological and chemical effects, change the property of different kinds of solution. In HNMR experiments, we have showed that the emitted qi effect on the variation of biological molecular structure is due to the H-bonds. Can the emitted qi effect the solid materials with very steady structure? For this, we have conducted many experiments. In this experiment, a few qigong masters emitted qi to the Y-, Te- and Bi-system's polycrystal-superconductive materials. Then, we measured Tc and Ic of these materials. We found that some qigong masters could make Tc and Ic down, others could make them up, and the changes were quite steady. After changing from room-temperature to liquid-nitrogen temperature for many times, the "un-accepting" qi "materials" went bad in their property. When a qigong master emitted his qi to materials, the Ic and Tc of these materials could not only return to the original values, but be made to exceed their original values. That is, the emitted qi can return and improve the property of the higher-temperature-superconductive materials.

In this experiment, it has also been found that when a qigong master formed a field, the Tc and Ic of the higher-temperature-materials being positioned in the field should change in two-directions. This is in agreement with our other experiments about other biological and chemical materials.

At present, we are researching the influence of the emitted qi on the property of higher-temperature-superconductive devices. In view of the devices having been put in use, it is expected that this research will have a fairly economical value.

The physical mechanism that the emitted qi can return or improve the property of superconductive materials (and devices) are being under investigation.

**1— 58 A STUDY OF THE HYPERCHROMIC EFFECT AND
HYPOCHROMIC EFFECT OF THE DNA UNDER THE
EFFECT OF THE EMITTED QI AND THE WILL**

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Measurements of 260nm absorbances for bovine thymus DNA and yeast RNA under the action of the emitted qi and will of qigong masters were conducted. The result showed as follows.

DNA samples which were treated by different qigong masters had different hyperchromic effects ($P < 0.01$) which could be further followed and observed in a refrigerator for 4 ~ 48 hours. There was no change for RNA. It appears to show that the emitted qi and the will of qigong masters may have effect on DNA conformation.

**1—59 THE EFFECT OF THE EMITTED QI ON THE REACTION
OF MALATE DEHYDROGENASE**

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Malate Dehydrogenase (MDH), an important oxidoreductase in various tissues, is one of the indispensable enzymes in the normal metabolism of organisms. A study has been made to show the change of MDH reaction in a few kinds of tissues after the effect of the emitted qi on rabbits. 18 rabbits were divided into 3 groups. One out of six was the control one. The other 5 received the emitted qi. 7 kinds of tissues from the liver, skeletal muscle, spleen, heart, adrenal gland, kidney, lungs of the samples were analyzed after they were killed. Ultra-violet spectrophotometry was used to measure the protein concentration of the tissue extract, and then the MDH activity. It was found the emitted qi worked on skeletal, muscle, lungs, heart and spleen obviously in two-directions. However for the liver, kidney and adrenal gland, the emitted qi had somewhat inhibitory effect on MDH. The result reveals that the emitted qi is not capable of having effect on every individual, its effective level is 52%. The emitted qi is most effective on the heart and skeletal muscle among the tissues tested.

1—60 THE FUNDAMENTAL OF QIGONG ANESTHESIA AND EXAMPLES

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Anesthesia is indispensable in major operations. Sometimes minor operations are performed without anesthesia and some major operations are performed without anesthesia for some reasons. Absence of pain is the purpose of anesthesia. The quicker disappearance of the action of narcotics the better after the suture of the wound.

Qigong anesthesia means the patient loses his consciousness when the qigong master emits his qi to him. But after cessation of emission of qi the patient comes to. This brings about favourable prognosis and is taken as an ideal anesthetic way.

When a person is injured, endorphin is produced within the body, which kills pain. Then a qigong master is able to use qigong anesthesia.

Man and animal experiments proved that the health condition and qi emission are closely related.

Ten min. later after qi emission, the effect is nearly the same to drug anesthesia. 96% of the pain nerves is anesthetized, which verifies the action of qigong anesthesia. Ten min. later after cessation of qigong anesthesia, 24.47% of anesthesia disappears. 72.53% pain remains. It shows the quick loss of anesthesia.

Facts prove that qigong anesthesia is an ideal anesthetic way. At the same time, it shows the anesthetic action is closely related to the health condition of the qigong masters.

1—61 THE RELATION BETWEEN DIFFERENT STAGES OF QUIET QIGONG EXERCISES AND ITS INFLUENCE ON THE ELECTRICAL FIELD AROUND ACUPOINTS

Marcus Bongart, Jan A Szymanski (Sweden), Zbigniew Garnuszewski (Poland)

Until quite recently, biologists did not know at all that plants, animals and human beings generate electric field. The physicists and electronic engineers were not particularly interested in the study of organism because they did not think that with their instruments nothing worthwhile could be found. However, the authors through experiments recorded the electric field generated by human and animal muscles, nerves and organs of the body. They selected 10 healthy volunteers to conduct experiments to see the quiet qigong exercises' influence on the potential of the electric field around the human body. 479 registrations of the changed value of the electric potential were obtained in acupoints--Yintan (Extra 1) and Lao-gong (P 8) and in four mind stages.

1—62 THE SIGNIFICANCE OF INTERDISCIPLINARY COLLABORATION FOR STUDYING THE SCIENCE OF QIGONG AS THE CORE CURRICULUM IN AN INTEGRATED, CROSS-CULTURAL STUDY OF CHINESE HUMAN/ENVIRONMENT RELATIONS, CULTURE AND ART

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1. Some Educational Ramifications of The Movement in American Medical Practice Toward the Inclusion of "Alternative" Therapies Including Traditional Chinese Medicine, Herbology, Acupuncture and Qigong.

Seven Random Items to Make A Point:

a. On January 28, 1993 *the New England Journal of Medicine* reported that 61 million Americans used an alternative medical therapy in 1990. Over 10 billion dollars a year are expended on such alternative practices and these are often not covered by conventional insurance.

b. Dr. Oscar Janiger (with Philip Goldberg) in his brilliant new book *A Different Kind of Healing* shows a surprisingly large number of doctors of allopathic medicine utilizing non-allopathic techniques with their patients while on the surface remaining conventional medical practitioners. Many of these so-called unconventional practices used by the doctors interviewed are derived from TCM and qigong along with a number of other western alternative and folk techniques.

c. In the spring of 1993 The Public Broadcasting System aired Bill Moyers' five part "Healing and the Mind" television series which began with the segment called "The Mystery of Chi". Lists throughout the country and regional discussion groups have been formed to continue the dialogue stimulated by the television series.

d. The Institute of Noetic Sciences will hold a major conference and produce a national six-hour television documentary next fall called "The Heart of Healing". The series will consider research findings on the mind/body issue from cross-cultural perspectives including TCM

and qigong.

e. In the fall of 1992 I presented a report on various TCM methodologies including qigong which were listed as important healing techniques being practiced in the region along with other indigenous methods of healing from the American Southwest.

f. Also in the fall of 1992 the *New York Times* published a major piece on "The Mainstreaming of Alternative Medicine" by Douglas Barasch (NyT Magazine October 4, 1992). Barasch emphasizes the role played by U. S. /Chinese interactions regarding medical practices. He cites, among many others, the experiences with TCM and qigong in China of Dr. David Eisenberg from Harvard Medical School. The article reinforces the premise that such "unconventional medical practices" play an important role in health care and healing in America.

g. Lastly, The U. S. Government National Institute of Health has opened an Office of Alternative Medicine directed by Dr. Joe Jacobs. The creation of this office changed the strictly rational-empirical medical orientation of the NIH and signaled a possible shift in official governmental policy toward non-allopathic medicine.

Just a few the many examples of movement in American medical circles towards consideration of non-allopathic medical practices signify a major flow of interest and concern in American society and they all reflect the importance of TCM, herbology, acupuncture and qigong in stimulation changes in attitude and practice by Americans with regard to health care and healing.

We are witnessing a quantum shift in consciousness pertaining to: (1) the nature of illness, (2) the nature of healing as regards the mind/body issue, (3) the roles and relationship of patient and healer and (4) the viability of incorporating a wide variety of medical therapies from diverse cultures in common practice.

2. The Role of American Higher Education in Cross-Cultural Considerations of Science, Medicine, Mind/Body Issues, Consciousness Studies, Arts and Human/Environment Relationships

a. Introduction and General Overview

In 1974 the U. S. Government sponsored a "Report on Chinese Medicine" which provides a window on the more or less contemporary situation regarding academic studies in the field in the U. S. at that time. More recently, there have been a plethora of publications and re-publi-

cations of new and older works pertaining to a wide variety of aspects of TCM and qigong. In the medical field numerous studies have been undertaken led in the U. S. ,perhaps ,by,Dr. David Eisenberg's work *Encounters with Qi* (1976). In Europe there have been a large number of recent publications such as Dr. Manfred Porkert's *Chinese medicine* (1982) to name one of many. A number of TCM, martial arts and qigong magazines, journals and newsletters also exist. These cover a widely diverse group difficult to categorize. By way of random example, qigong Magazine focuses on a particular San Francisco orientation to qigong while Qi Magazine is a general ,so-called slick magazine with commercial orientations to TCM and energy-medicine as rather broadly defined. There are,of course,numerous,excellent Asian publications in Chinese,Japanese and Korean (some of which have been translated into English) which are very influential primary sources in the field. Needless to say ,several of the great university libraries contain impressive Asian holdings for research. Smaller institutions of liberal education such as the Claremont Colleges have computerized access through inter-library loan systems to such holdings. Claremont has fairly good Asian collection of its computerized access through inter-library loan systems to such holdings. Claremont has a fairly good Asian collection of its own as well. Lastly,and perhaps most importantly,a growing number of Chinese qigong researchers and masters and practitioners are to be found in American colleges and universities. These individuals are also found in major Chinese communities in the United States where they also provide access to knowledge in a significant way.

What the above demonstrates in that from the academic perspective there are,not surprisingly,many areas of research and study to be explored. The hard sciences have a particularly important role to play in researching qi in terms of theory and practice. Medical education must very soon incorporate cross-cultural perspectives including TCM and qigong as a part of their curricula. As noted above,the social sciences,such as anthropology,sociology,psychology and Asian studies in American universities and colleges have already begun impressive programs of research in various areas of the field which provide an excellent basis for future development.

However,in order to meet the specific challenges of the immense changes occurring around American health care and healing and to meet the demands of the extraordinary cross-cultural exchanges involved in the changes described in section No. 1 above—American higher education requires a concerted effort at mounting interdisciplinary programs to integrate and ameliorate the following factors;(1) the diverse kinds of knowledge and information coming together in studying the theory and practice of TCM and qigong;(2)the different ways of processing information in the diverse fields and cultures involved;(3)the diverse ways of perceiving knowledge that these exchanges of practice and theory create crossing between cultures;i. e. a "new" kind of knowing occurs in the transfer process.

In short, cultural exchanges involve the need for careful examination of the distortions and pitfalls that such transfers inherently involve so that exchange and communication can occur on the most productive and creative levels.

1—63 A STUDY OF APPLICATION OF COMPUTER TO QIGONG ENERGY

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The purpose of the present study is to use a computer to analyze the potential difference of energetic meridians of the body of a qigong master.

Qi and blood flow in meridians and the vascular system. I have proved that qigong masters can control qi in meridians with his will by a computer.

By using a computer to store and analyze the signal from the human body, I have obtained the following results.

1. The potential difference and the number of variation of potential of a qigong master are higher than other persons without qigong practice.
2. The potential difference of two points of the human body are changing with time.
3. The potential difference and the number of variation of potential of human are influenced by other persons. Both action in a distance and direct contact can change the potential difference and the number of variation of potential.
4. The number of variation of potential of two points of the Large Intestine Meridian of a patient is less than the number of healthy people, for example, the former is 20, the latter is 200.
5. A man without qigong practice closes his eyes like a qigong master to control qi with his mind always lowers the potential difference and the number of variation of potential difference.
6. There was a low frequency (3 Hertz) electromagnetic wave which radiated from other star with high intensity making over 10000 mV voltage in meridians have been found on July 8, 1992. This signal can make man healthy. It was written in the Canon of Internal Medicine—*an 2500 years ago ancient Chinese medical classic*.
7. Comparing the number of variation of potential difference of healthy persons and patients, we can diagnose precisely.
8. We can input and store the signals of a qigong master's qi and output it to ordinary persons by a computer and we have found qi comes from a computer towards patients make them healthy.

2. Clinical Study

2-1 MAKING FURTHER ADVANCES OF THE PUBLIC HEALTH CARE FOR THE AGED WITH CHINESE CHARACTERISTICS

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To think it necessary to make further advances of the public health care for the aged with Chinese characteristics, I would like to discuss the issue in three aspects. First, according to scientific calculation, the life span of human beings might be 110—120. But social and emotional factors cause human beings to get old or die early. So we should consider carefully the health care of the aged and pay much attention to the most valuable thing—life of human beings since everyone knows life is short. Second, in our country, public health care has a long history. Chinese people have paid attention to keeping fit since ancient times. Therefore, traditional health care has Chinese characteristics. It includes healthy drinks therapy, diet therapy and qi therapy. Healthy drinks therapy: With the rising of the living standard, more and more people in China have paid attention to the healthy drinks and the Chinese have the tradition of having hot drinks, which is a distinct method of health care for the aged. Diet therapy: The Chinese have a lot of experience in regard to how to keep fit and cure diseases with food. We make use of different kinds of food such as porridge, cooked rice, thick soups and noodles. Qi therapy: Some think qi is the origin of everything. People's life, birth, death, quality, etc. are all related to qi. The emergence and development of qigong study have relied on the struggle of the Chinese people against diseases and nature, and is a crystallization of collective wisdom of the Chinese people. The recent study shows: the emitted qi can damage bacteria and promote their growth, which is concerned by qigong's power and will of the qigong masters. Therefore, we have proved the fact that the immune system is somehow related to the transmission and establishment of information, which was the first help for the further study of the nature of "two-way adjustment". Further experiments on viruses and cancer cells indicate that qigong has biological effect and is scientific, objective and can be repeated, which provide a theoretical basis for qigong's development. Qigong is a science belonging to the future study. With the development of science, people will understand the nature of "qi" better, which belongs to the science of human body. we have done many medical researches on qigong. We should also do biological and universal researches on qigong. Third, through the above discussion, we may know better about people's natural life span, reasons for the coming of old age and super old age, and the more important is that we know what to do in health

care of the aged with the Chinese characteristics and that we must do our best to help realize the dream that people live to the natural life span, and for the purpose "health for everyone in 2000".

2—2 EFFECTS OF QIGONG ON PREVENTING STROKE AND ALLEVIATING THE MULTIPLE CEREBRO-CARDIOVASCULAR RISK FACTORS—A FOLLOW-UP REPORT ON 242 HYPERTENSIVE CASES FOR 30 YEARS

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Stroke is a commonly-seen disease. Hypertension, cardiac hypertrophy, abnormalities of coagulation—fibrinolytic system and metabolism of apolipoprotein were an important risk factor in stroke. Since 1958, a study of prospective comparison was undertaken to evaluate the long-term effect of qigong in hypertensive patients.

I. 242 hypertensive patients were divided randomly into the qigong group (treated by qigong and small dosage of regular, antihypertensive drugs $n=122$) and the control group (treated by the antihypertensive drugs only $n=120$). 30 years follow-up showed that their blood pressure steady rate was 86.81% and 68.25% respectively ($p<0.01$). The accumulative mortality rate during the follow-up period was 25.41% in the qigong group, 47.76% in the control group ($P<0.001$). Further analysis showed that the incidence of stroke and death due to stroke in the qigong group was 20.49% and 15.57% respectively. Compared with 40.83% and 32.50% in the control group, both rates in the qigong group were significantly lower ($P<0.01$).

II. Ultrasonic cardiogram was performed on 40 hypertensive patients.

(1) Before treatment, ejection fraction (EF) was 0.57 ± 0.09 , mitral valve diastolic closing velocity (EFV) was 0.92 ± 0.30 and mean velocity of circumferential fiber shortening (MVCF) was 68.67 ± 20.40 . After practicing qigong for one year, they were 0.64 ± 0.10 , 1.10 ± 0.26 and 76.64 ± 17.41 respectively ($P<0.05-0.01$).

(2) Before treatment, interventricular septal thickness (IVST) was 12.96 ± 1.64 (mm) and posterior wall thickness (PWT) was 11.38 ± 1.64 (mm). After practicing qigong for one year, they were 11.24 ± 1.81 (mm) and 9.98 ± 1.32 (mm) respectively ($P<0.01$). The above results indicated that qigong had beneficial effect on improvement of the left ventricular function as well as diminution of cardiac hypertrophy.

III. Plasma coagulation fibrinolysis indices were performed on 40 hypertensive patients. Before treatment, plasma PAI (plasminogen activator inhibitor) was 9.17 ± 1.57 (Iu/ml), tPA

(tissue-type plasminogen activator) was 1.52 ± 0.24 (Im/ml), VIIR:Ag was 130.40 ± 41.11 (%) and AT-III was 27.99 ± 3.48 (mg/dl). After one year of practising qigong, plasma PAI (8.10 ± 1.68 Iu/ml) and VIIR:Ag (131.50 ± 38.35 %) levels decreased, while plasma tPA (2.66 ± 0.73 Iu/ml) and AT-III (34.41 ± 7.09 mg/dl) increased. The above results suggested that qigong could play a major role in improvement of the function of coagulation—the fibrinolytic system.

IV. Serum apolipoprotein was performed on 40 hypertensive patients. Before treatment, levels of ApoA, ApoB and ApoA/ApoB ratio were 117.89 ± 31.03 (g/l), 118.15 ± 18.24 (g/l) and 1.00 ± 0.61 respectively. After practising qigong for one year, they were 133.58 ± 28.16 (g/l), 102.21 ± 19.17 (g/l) and 1.31 ± 0.71 respectively ($P < 0.05 \sim 0.001$). These findings suggested that qigong had beneficial effect on improvement of metabolism of apolipoprotein.

According to both our past and present investigations, we believe that qigong plays a major role in improving the self-regulation and alleviating the multiple cerebro-cardiovascular risk factors, this might be one of mechanisms of which hypertension was controlled and stroke was prevented.

2—3 A STUDY OF THE RECUPERATIVE FUNCTION OF QIGONG ON HYPERTENSIVE TARGET IMPAIRMENT

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Hypertension is a commonly-seen disease of the middle aged and elderly, and a series of target impairment is caused while the disease proceeds and blood pressure rises, so far except for lowering blood pressure by drugs, non-medicament traditional Chinese therapy attracts man's attention especially. This study discovers that the function of the heart, brain and kidney in the aged hypertensive patients are worse than those of the same age without hypertension. It suggests that long term hypertension actually impairs the functions of the heart, brain and kidney. A comprehensive treatment in which qigong plays the main role was adopted at the same time. By a contrast analysis before and after qigong training (one year), and by adopting modern objective indices, we discovered the abnormal rate of isoelectric statistical mapping analysis of EEG reflecting the function of the brain improved remarkably. The total abnormal rate of isoelectric statistical mapping analysis of EEG decreased from 63.3% to 26.7%, The difference is significant. Ejection Fraction (EF) and Mean Velocity of circumferential fibre shortening (MCVF) reflecting cardiac function increased remarkably. Cardiac output increased too, and the total external resistance decreased. Urinary IgM was from 0.268 ± 0.100 to 0.062 ± 0.092 . The difference was significant. It suggests qigong training not only stabilizes blood pressure but also retards the degeneration of the heart, brain and kidney. The study elucidates that qigong is a simple and useful method for recuperation.

2—4 A STUDY OF QIGONG ON HYPERTENTION AND REDUCTION OF HYPOTENSOR

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We studied the effect of qigong on blood pressure in 31 I-stage hypertensive cases and blood pressure rose after withdrawal or reduction of hypotensors. The results showed that qigong was more effective than hypotensors. It suggests that qigong may replace or partially replace drugs to lower pressure.

2—5 CLINICAL OBSERVATION ON THE TREATMENT OF 158 CASES OF CEREBRAL ARTERIOSCLEROSIS BY QIGONG

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This report expounds the results of 158 cases of cerebral arteriosclerosis after 38 to 180 days treatment (with an average of 82 days) by conducting and respiration qigong. 91.83% of the patients' symptoms have been relieved, and 82.82% of the syndromes have been alleviated. The unstable EEG cases have declined to 36.36% (48/132) comparing with 52.37% (69/132) before the training practice. ($P < 0.01$) The conducting and respiration qigong also had an effect on the wave amplitude of rheoencephalogram by recovering ($P < 0.01$) or lowering ($P < 0.01-0.05$) the cerebral blood flow to the normal level. The number of the sufferers whose total serum cholesterol and serum triglyceride determination were higher than normal had decreased to 72 (54.96%) from 113 (86.07%) and 75 (57.73%) from 118 (90.07%) separately after dirigation ($P < 0.01$). Obvious differences before and after the training practice were seen. This has proved that qigong is effective in preventing and curing gerontal diseases—cerebral arteriosclerosis, so it is worth popularizing widely. In addition, qigong can balance yin and yang, adjust qi and blood, dredge the meridians and thus enable the body to go into its normal state of yin and yang.

2-6 TREATMENT OF 30 CASES OF PRIMARY HYPERTENSION BY QIGONG TECHNIQUES

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Thirty cases of primary hypertension has been treated by qigong techniques as the first medical choice. Population is composed of 20 males and 10 females aging from 30 to 50 years.

Measurement of ilectrical embalance has been performed by a Decoder 2000, a sophisticated apparatus based on a pulse generation of 10 Hz with low intensity of current. This instrument is able to investigate the colloidal state of tissues in order to obtain a valuation of the reaction of body organs concerning oxgen uptake of peripheral tissues.

Qigong exercise has been performed to obtain a direct control of vascular resistance, monitoring blood pressure values two times a week at the same hour.

First data are suggestive of a good response in terms of blood pressure control.

2-7 PATIENTS OF HYPERTENSION SHOULD EXERCISE QIGONG CAREFULLY

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37 patients of hypertension divided into two groups were studied with Mode-UA 251 Printing/Auto Inflation Electronic Digital Blood Pressure and Pulse Meter anda Mode—TP—02 multipoint making circular test thermometer in this paper. The results showed that:

1. The SBP, DBP and HR of the first qigong group who did the exercise successfully were significantly improving respectively.

2. The second qigong group had some problems. They thought that they could open their "third eye", "emit qi", and develop natural gifts. So their SBP, DBP and HR were worse than before.

3. The paper suggests that;
patients of hypertension must be careful when they exercise qigong. They should think of concentrating their mind at the lower dantian.

2—8 A REPORT ON 21 CASES OF KIDNEY DISEASES TREATED BY QIGONG

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Traditional Chinese Medicine

Such diseases as chronic primary glomerulonephritis, IgA nephrosis, chronic nephritis, nephrotic syndrome and renal failure in modern medicine are generally categorized under the head of kidney diseases in TCM. The feature of the mechanism of such diseases is the excessiveness in the exterior with deficiency root cause, and neither modern medicine nor TCM has particular effective therapy and drugs for them. From October 1988 to August 1992, the ward of our department admitted and observed 21 cases of such diseases. All of them had been diagnosed through renal puncture biopsy before being hospitalized in our ward with accurate diagnosis. Modern medicine and TCM had been applied to them without any significant effect. Among them, the case history ranged from 9 months to 18 years, and the age of the patients was from 20 to 68. There were 11 men and 10 women. Diagnosis and evaluation of the qigong treatment applied to them has been done based upon the standards of diagnosis and curative effects of kidney diseases formulated respectively by the Committee of Internal Medicine, China Association of TCM and Practical Internal Medicine, 8th edition. During the hospitalization, those who had long taken hormone were instructed to reduce the dose gradually. For some patients with exogenous pathogenic factors, qigong treatment was applied with the assistance of medicine. The patients practised qigong by themselves lasting from 3 to 7 hours every day. The emitted qi treatment was made subsidiary, and it took 20 minutes every day. The course of treatment was from 6 to 12 months. After the patients being discharged from the hospital, investigation in the clinic into each of them was made every two months and it lasted from 6 months to 3 years.

Results: According to the standards of classification of TCM, marked progress is shown in 52.4% of all the cases, 19% of the cases are improved, and thus the effective rate is as high as 71.4%; according to the standards of modern medicine, these figures are 53.3%, 23.3% and 76.6% respectively. Such conclusion is drawn from the above facts that qigong treatment has better effect over western medicine and TCM in dealing with kidney diseases.

Through clinic analysis, it is found that the average time it takes to get significant effect in all the indexes in observation is 112 days, and so it is better to take four months as one course of qigong treatment for kidney diseases. And in addition, qigong therapy, as a kind of comprehensive treatment, can both strengthen the patients' resistance and dispel the invading pathogenic factors, and it is most suitable for chronic patients with excessiveness in the exterior with deficiency root cause.

2-9 THE EFFECT OF SELF-CONTROLLING QIGONG THERAPY ON THE IMMUNE FUNCTION OF CANCER PATIENTS

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The effect of the self-controlling qigong therapy on the cellular immunity in patients with various malignant tumors has been studied. The change of the immunological functions of neutrophils, lymphocytes, and red blood cells before and after the qigong therapy have been examined in 30 cases of malignancy by using five appropriate methods related to cellular immunity. The results are as follows, and A and P represent the value before and after the therapy respectively.

1. Chemotaxis of neutrophils measured by agar plate method:

Chemotactic movement(distance): $A=1.75 \pm 0.53\text{mm}$ and $P=2.35 \pm 0.77\text{mm}$ ($P<0.01$),

Chemotactic index: $A=2.09 \pm 0.55$ and $P=2.83 \pm 0.95$ ($P<0.01$)

2. Phagocytosis of neutrophils measured by indian ink phagocytic test—— phagocytic rate:

$A=32.5 \pm 9.22\%$ and $P=51.33 \pm 12.24\%$ ($P<0.01$)

3. Bacteriocidal function of neutrophils measured by nbt reduction method—— nbt positive rate:

$A=23.07 \pm 6.96\%$ and $P=40.23 \pm 10.80\%$ ($P<0.001$)

4. Lymphocyte transformation rate:

$A=54.35 \pm 14.94\%$ and $P=64.55 \pm 10.31\%$ ($P<0.01$)

5. Yeast complement rosette test:

C_3b rosette rate of RBC: $A=8.40 \pm 4.68\%$ and $P=12.41 \pm 3.92\%$ ($P<0.001$),

Rosette rate of immune complex: $A=10.95 \pm 4.86\%$ and $P=6.41 \pm 2.78\%$ ($P<0.001$)

From these results we conclude that (a) the self-controlling therapy might enhance the defensive ability of organisms by stimulating the immunity of neutrophils; (b) the promoted immunity of RBC by the selfcontrolling therapy may result in accelerated removal of immune complex and hence the hazards from immune complex might be avoided; and (c) the self-controlling therapy can raise the rate of lymphocyte transformation and hence might elevate the antitumor power of lymphocytes. On the basis of this conclusion, we consider that the self-controlling qigong therapy is a good measure for keeping fit and treatment of diseases.

2-10 A CLINICAL STUDY OF THE ROUTINE TREATMENT OF CANCER COORDINATED BY QIGONG

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Ever since 1985, we have advised our cancer patients to persist in long-term qigong exercises with encouraging results, side by side with giving them routine treatments such as chemotherapy, radiotherapy and surgery. 62 cases of cytologically and pathologically confirmed intermediate and advanced cancer patients who had missed the opportunities of surgery and radiotherapy were at random divided into 2 groups; the treating group composed of 32 patients who were under chemotherapy but were coordinated by qigong (Group I), and the control group comprising the remaining 30 patients who didn't do qigong exercises but underwent chemotherapy only (Group II).

Results showed that Group I had no deterioration in the grading of patients' health. Rather, part of the 32 patients had better health than previously, with most of them having a stable WBC or an unapparent and slight WBC decline; a few patients in this group had a poor appetite, nausea, vomiting, etc., the mild reactions happening in the alimentary tract. Of these 32 patients, 29 (92%) were effective cases that didn't have their chemotherapy suspended, while failure was found in the remaining 3 cases (8%).

In contrast, in Group II, deterioration in patients' health grading was invariably seen. Of the 30 cases in this group, 18 cases (61%) persisted in chemotherapy without interruption. The remaining 12 cases had grown much worse in their health grading, or WBC decline with the total count less than $4 \times 10^9/L$, or reactions seen in the digestive tract so severe as to cause chemotherapy to be stopped. Statistically, the difference seen between the 2 groups was significant ($p < 0.05$).

Besides, this concerted qigong-chemotherapy in the management of cancer has the advantage of raising the curative rate, extending the tumour-free survival of the patients, and bettering the quality of their survival.

So far there have been many confirmed substantial instances showing these good effects. For example, an advanced case of nearly totally obstructive esophagus was admitted on June 26, 1985. On admission, he complained of dysphagia for a 3-month duration associated with belching, mucus-spitting and pain in the front chest and in the back. An apparent stricture was found at the middle-third of the esophagus through barium meal fluoroscopy and roentgenography, with the top esophagus at the site of stricture expanded into a "cupping" shape. Left anterior oblique view revealed an apparent shadow of the soft tissues (X-ray film No5238). His endoscopic biopsy reported squamous cells (path number: 85-431). His symptoms and foci totally disappeared through the concerted method of the qigong and chemotherapy. He has been able to have general diet and no cancer cells have been found through endo-

scopic biopsy. For 8 years he has been living, tumour-free and has been to this hospital each year for re-examination with no abnormality found so far.

As to the curative effect of the routine therapies in conjunction with qigong on cancer, systematic studies are being made.

2 — 11 CURATIVE EFFECT ANALYSIS OF 122 TUMOR PATIENTS TREATED BY THE INTELLIGENCE-QIGONG

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This article has summarized and analysed the curative effect concerning 122 tumor patients, which had undergone the definite diagnosis in hospitals, treated by the Intelligence-Qigong (IQG). Among them, 71 patients contracted benign tumor, and 51 had malignant. 26 patients of which had gone through chemotherapy or radiotherapy. They asked help from IQG because of recurrence or uncontrolled conditions.

The course of treatment lasted for 22 days in the form of training class. In the course, the movements of the IQG were taught and practiced. At the same time, patients learned the theory. Every patient was treated by the emitted qi too.

We analysed the curative effect in three respects, benign and malignant tumor, long-term and short-term in qigong treatment, as well as multiple treatment and single qigong treatment. Then, we dealt with relevant data by statistics, and concluded as follows.

First of all, we consider there are curative effects to various extent for both the benign and malignant tumor, and further, for the cancer of different parts of the body. Secondly, in the process of treating cancer by IQG, the curative effect is in direct proportion to the treating duration, that is, the longer the patients have practised, the better the curative effect has obtained. Thirdly, between the curative effect of the multiple treating group and that of the single IQG treatment group, there is no significant difference, based on $P > 0.05$ about Chi-square test. Finally, to investigate 33 cancer patients after treatment, 17 of them died. They all but one died without suffering. It shows that IQG plays its role in euthanasia for the cancer patients.

It is certain, as a result, that IQG is useful for treating tumor. The survivors live better, while the unsurvivors died without suffering.

2—12 CLINICAL OBSERVATIONS ON 30 CASES OF CANCER TREATED BY QIGONG THERAPY

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We have observed 30 cancer cases treated by qigong for a long period.

The 30 cases were divided into the following groups.

(1) 10 cases were examined by exploratory operation (among them 4 cases were undergone radical operation, 6 were not). All was treated by qigong therapy.

(2) 10 cases had been treated by radioactive, chemical therapy or supplementary treatment by Chinese herbal medicine and qigong treatment at the same time.

(3) 10 cases were not indicated for operation, radioactive and chemical therapy. They were treated by qigong only.

Method: (1) The emitted qi was used (including message water, message prescriptions and long distance qigong treatment). (2) Patients did qigong exercises by themselves.

The result: Surviving over 5 years; 13 cases; tumor smaller in size; 21 cases; pain relief or disappearance; 25 cases.

Case example.

Luo Lin, a female deputy doctor in charge was examined and diagnosed to contract lung cancer. Then she was performed by a radical operation on August 15, 1980. Three months later, she began to do Guo Lin's qigong exercise. From then on metastasis was not seen.

2—13 CLINICAL IMAGE EXAMINATION TO SEE THE CURATIVE EFFECT OF 120 CANCER CASES TREATED BY CHINESE-WESTERN MEDICINE AND QIGONG THERAPY

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According to the clinical image examination 120 cancer cases treated by Chinese-Western medicine and qigong therapy were investigated. This essay explains that (1) Guolin's New Qigong Therapy is very effective to cancer; (2) The curative effect of Chinese-Western medicine and qigong therapy is superior to any of qigong therapy or Chinese-Western therapies; (3) The rate of incidence of cancer diseases is high in the middle and aged males. Therefore, they should be examined frequently to make early diagnosis and early treatment.

2 - 14 TREATMENT OF ADVANCED GASTRIC CANCER IN THE AGED BY THE COMBINATION OF QIGONG AND MEDICINAL HERBS

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The purpose of this paper is to study the short-term curative effect of the therapy on advanced cancer, the survival quality and the effect produced by immunobiochemistry through the analysis of the curative effect of advanced gastric cancer of the old people treated by qigong together with medicinal herbs.

Clinical information

1. Selection of cases:

40 patients in this group were all examined by gastroscopy, X-ray, and ultrasonic examination of B-scope and the diagnosis was confirmed with pathological and cytological examinations.

Sex and age:

Male, 32; female, 8; the ratio of male and female was 4 : 1. The age ranged from 60 to 80.

Positions of pathological changes:

Cardiac cancer; 26 cases; cancer in the gastroboddy; 6 cases; cancer of gastric antrum; 8 cases.

Pathological types:

Adenocarcinoma; 18 cases; poor differentiated adenocarcinoma; 12 cases; mucous adenocarcinoma; 6 cases; signet-ring cell carcinoma; 4 cases.

Subjects for research:

32 were patients with gastric carcinoma who lost the chance for operation because of their old age and weakness or because the disease that they suffered from belonged to the advanced stage. 4 were patients who had recurrence after radical operation. 2 had no effect of chemotherapy. 2 were patients who had undergone chemotherapy and could not persistently accept the treatment because of serious side effect.

2. Method of treatment:

The treating group was treated by qigong combined with herbs, developed and prepared as an anticancer drug known as "Weiliuping". The control group was only treated by "Weiliuping".

Results:

1. The relief of main symptoms:

There was significant difference between the two groups. ($P < 0.05$).

2. The influence of the immune functions:

In the control group, the index of immunity slightly increased after the treatment. However, the difference was not significant ($P > 0.05$). In the treating group, the index of immunity obviously improved and the difference was significant. ($P < 0.01$).

Discussion:

The short-term effect of the treatment of advanced gastric cancer by qigong together with herbs "Weiliuping", was satisfactory. (The effective rate was 22.7%) The effect was better than that of "Tianxian pill" which was widely used to treat digestive tract cancer at home in recent years. (The effective rate is only 1.2%).

2-15 FROM MEDICINE OF ORGAN TO MEDICINE OF FIELD — 10-YEAR EXPERIENCE OF APPLICATION OF QIGONG TO MEDICAL PRACTICE

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Western medicine proposes that human body mainly consists of organs, whereas the wisdom of Chinese medicine teaches the importance of space within the body filled with various kinds of concept of elements and energy which endows us with knowledge to maintain the life and forming the "field". This "field" has not been explained by physical science, but I estimate that it is neither composed of a single element like electricity nor magnetism. I would rather call it the "life field". Furthermore, if "qi" means the information which maintains the order of life, the field and "mind" means the expression of one of the elements of fields, it is obvious that there are three means in medicine; the one dealing with organs, qi, and mind. On this concept, for cancer treatment I have practised holistic medicine, applying Western medicine for organs, Chinese medicine for qi, and psychological treatment for mind.

I will report the result in 1,768 cases of cancer treatment especially qigong from November 1982 to February 1993.

Method:

The patients of cancer were treated not only by Western medicine which is the most popular treatment in Japanese medicine, but also with Chinese medicine which consists of herbs, acupuncture and moxibustion, qigong and diet, and psychological treatment which means relaxation and image therapy. Qigong consists over 10 kinds of means like Fang-Song-Gong, Tai-Ji-Quan, Guo-Lin-Xin-Qi Gong, etc.

Results:

1. It is difficult to express the result of my therapeutic treatment statistically as in Western science, because the treatment was not applied equally to each patients, but in various ways depending on to the symptoms of the cases. Calculating three-year survival rate in 505

cases of cancer till January 1990, favorable result showed.

(i) In the grade 3 and 4: 103 cases (42.7%)

(ii) In the end stage: 185 cases (11.9%)

2. The number of the patients of cancer visiting my hospital is increasing year by year, 54 patients in 1983 to 677 cases in 1992. This fact shows that the holistic medicine is getting accepted in Japan.

Besides, cases will be presented, which show you more in detail the contributing role of qigong in the treatment of cancer.

2-16 THE CLINICAL REPORT ON 75 CASES OF CHRONIC HEPATITIS B TREATED BY QIGONG

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Since 1989, we have worked out a qigong set to nourish the liver according to the TCM principle "psychosomatic treatment". Meanwhile, we selected 139 cases of chronic hepatitis B which were divided into two groups at random according to the revised diagnostic and classified criterion at the National Academic Conference on Virus Hepatitis held in Shanghai in 1990. 75 cases were chosen to the experimental group which were treated by herbs and qigong. The other 64 cases treated only by herbs belonged to the control group. 116 inpatients of the two groups were treated for more than 3 months; 23 inpatients for 2-3 months and inpatients with less than two months was not selected to be observed. Each observation index was checked once each month until they left. The experimental group practised qigong 30 minutes each morning and evening.

The result shows as follows: HBsAg negative rate of the experimental group was 52.6%, that of the control group was 28.8% ($P < 0.01$); HBeAg negative rate of the experimental group was 73.3%; that of the control group was 49.2% ($P < 0.01$); GPT, A/G recovery rate of experimental group and the recovery condition of the main symptoms were better than those of the control group. It can be deduced that the effect of herbs with qigong to the hepatitis B patients is better than herbal treatment.

At the appraisal meeting held by the Educational Authority, 28th April, 1992, all the experts present held identical views that our research had reached the national advanced standard.

2-17 OBSERVATIONS ON EFFECTS OF 31 CASES OF DIABETES TREATED BY HUICHUNGONG

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Laboratory researches and clinical observations of 197 middle-aged and aged cases were studied. They practised Huichungong exercises, aiming at prolonging life from 1986 to 1990. Here is the summary of the 31 cases of diabetes.

1. Body weight; 24 cases had favourable weight before the exercise. There was no change after the exercise.

2. FBS; After exercise blood sugar reduced from 10.19 ± 3.29 mmol/L to 6.93 ± 1.98 mmol/L, $P < 0.001$.

3. Blood fat; Cholesterol reduced from 6.75 ± 1.32 mmol/L to 5.51 ± 1.16 mmol/L, $P < 0.001$. Triglyceride; From 2.80 ± 1.01 mmol/L to 1.34 ± 0.71 mmol/L, $P < 0.001$.

4. Syrum insulin test (IRI); It showed a two direction adjustment after exercise, the average value reduced from 16.604 ± 6.005 MIU/L, to 12.62 ± 14.85 MIU/L, $P < 0.05$. It indicates the exercise may improve the biological effect of insulin.

5. Severe obstruction of nail-microcirculation has been relieved greatly.

6. Increasing the level of HDL—C, $P < 0.05$

7. Increasing the ratio of APOA—I/APOB, $P < 0.001$, playing an important role in increasing the APOB amount in prevention of atherosclerosis.

8. Clinical manifestation; Strengthening the body resistance, not easy to catch common cold, free food choice, normal life.

The above shows one year's exercise has a good comprehensive result for diabetic patients, comparing individually it is much better than the simple drug treatment. It can prevent complicated cardiac, cerebral vascular diseases and peripheral vascular disease. It is a new method in the treatment of diabetes II without medicament. This paper also emphasizes the mind concentration and good mental state during exercises may produce a good feedback action.

2-18 THE TREATMENT AND CLINICAL ANALYSIS OF QIGONG SIDE-EFFECT

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This comprehensive treatment of 52 cases (male 34, female 18) with qigong side-effect

had got better curative effect. Patients' age structure: youngest: 17-years old; oldest: 64-years-old, and 36 cases from 20-40 years old. The shortest course of disease was two days and the longest was 8 years.

According to clinical symptoms and differentiations of syndromes these cases were divided into four types: 1. Disorder of qi and blood; 2. Obstruction of qi; 3. Genuine qi loss; 4. Reverse qi flow. There were 20 cases in the first type, 14 in the second, 8 in the third and 6 in the fourth. The other 4 cases belonged to the "mind confusion" type.

I treated these patients with comprehensive measures, such as the emitted qi, digital pressure to acupoints, massage, acupuncture and herbs and self-practice of qigong exercise.

The average of the treating course was 17.6 times, symptoms in 16 cases totally relieved, in 8 cases alleviated. Only one failed. The effective rate was 96%. 13 cases had been treated by the emitted qi and digital pressure to acupoints.

The average of the treating course was 17.8 times.

4 cases had been alleviated. One failed. The effective rate was 92. %.

2-19 A CLINICAL ANALYSIS OF CERVICAL SPONDYLOPATHY AND ITS REHABILITATION BY TUINA QIGONG IN 267 CASES

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This paper reports the treatment of the cervical spondylopathy in 267 cases with rehabilitation by tuina qigong since 1989. Among them, 86 were males, 181 females. Most of the cases were females aged from 30—60 years. Course of disease was one day to 30 years. The common problems were cervical spondylopathy of the nerve root, the vertebral artery and the mixed type.

Traditional technique of Chinese tuina must be taken with coordination of qigong and digital pressure to acupoints. The results show: In the 267 cases, 248 cases (92.9%) were markedly improved, 18 cases (6.7%) were effective and one case (0.37%) failed. The average treatments were 15 times.

Diagnosis is based on palpation, symptoms and signs.

Pathogeny: The cervical spondylopathy happens due to the change of anatomical position caused by direct or indirect injury and retrograde affection.

Treatment: The "tract on rotation-reduction" manipulation was used with other measures to relax the muscles of the cervical part and relax the pressure of cervical vertebrae on the normal axis and put right the deranged cervical vertebrae and relax irritation of the nerve root, the vertebral artery, the sympathetic nerve and the spinal cord, making it return to the normal position. This method is a good way to treat the cervical spondylopathy at present.

2—20 QIGONG ' S CURATIVE EFFECT ON LUMBAGO AND JOINT PAIN

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They have used their expertise in this traditional Chinese breathing technique to treat acute and chronic lumbar muscle strains, and lumbar vertebral disorders. They treated 106 patients with very good results.

They had 35 acute patients and 71 chronic patients. The patient's age ranged from 16-year old to 78-year old. Before treatment, some patients had endured pain for 28 years while others experienced pain for only two days.

In general, averagely patients received 10 treatments.

However, some severe cases received 18 treatments while milder cases received only three.

Qigong Method

According to the degree of pain experienced, they used qigong through digital pressure to acupoints, entire body massage, and concentration of mind on specific areas. Each patient received 2-3 treatments each week. Treatments varied from 15 to 30 minutes.

Results:

Through qigong techniques, they have achieved a success rate of 90%. By using qigong, they can reduce muscle pain, and adjust muscle tension so that the dislocated joints and muscles can regenerate.

Qigong also is successful in the adjustment and balance of the spinal column so that the dislocated spinal column may return to a normal position.

2—21 A CLINICAL STUDY OF THE ANTI-AGING EFFECT OF QIGONG

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Although aging is known as a natural phenomenon, it is proved that those who take qigong exercise have got good effects on treating their disorders, strengthening their health, and promoting their longevity. And in our clinical practice, we have also got certain satisfactory results by applying qigong exercise (non-medical therapy) to treat the disorders of the retired workers. Now, we give the primary report as follows:

1. Subjects observed.

There were 200 retired workers, 100 males and 100 females; their age ranged from 52 to

76, averaging 65.7 for males and 63.5 for females. They were divided into 2 groups; the qigong exercise group and the control group, each group consisting of 50 males and 50 females.

2. Kind of qigong exercise and the time needed

The main qigong exercise used was Emei Nei Gong, (one kind of qigong exercises of the Emei School), including Anmo Gong, (a kind of breathing exercise with massage), Fangsong Gong (a kind of relaxation breathing exercise) and Liubu Yangshang Gong (one kind of breathing exercise for preserving one's health by walking a set of 6 steps). This qigong exercise was taken at least half an hour by the group.

3. Methods and results

Besides the clinical observation, superoxide dismutase (SOD) was determined and it, as we know, is a multimolecular biological enzyme, which is not easy to be oxidized and which can promote the function of cells and prevent them from intoxication by relieving its free radical group, thus promoting human immunological function and preserving health. The active SOD in erythrocytes was determined by using a fast microquantitative analysis, and the result showed that the level of SOD of the female qigong group was $2718.15 \pm 593.6 \text{ u/g Hb}$ while that of the female control group was $1704.3 \pm 572.84 \text{ u/g Hb}$; by comparison, the mean value of SOD of the qigong group is significantly higher than that of the control group ($p < 0.001$). The mean value of SOD of the member in the control group was $1678.18 \pm 484.14 \text{ u/g Hb}$ while that in the qigong group was $2740.85 \pm 602.16 \text{ u/g Hb}$; by comparison, the difference was significant ($p < 0.001$). The result showed that the qigong exercise was able to make our body produce an extraordinary proteinaceous substance—superoxide dismutase, which could remove the other harmful superoxides by dismutation, thus having the effect to keep our body in good health.

In short, taking the qigong exercise can stimulate the physical metabolism, promote the circulation of meridians and regulate the flowing of qi and blood, thus preventing and treating our disorders and promoting our longevity. In the meanwhile, medical therapy, as we know, can only treat limited kinds of diseases and it may also produce a lot of side-effect; and in our institute, after the qigong exercise was applied and SOD level was determined by the double-blind method, the result we got was rather satisfactory. This result suggests that taking the qigong exercise may keep old man in good health, make them energetic and promote their longevity. Therefore we suggest that the qigong exercise should be seriously considered as a subject which is worth further studying.

2—22 BIOHOLOGRAPHIC QIGONG DIGITAL PRESSURE THERAPY IN THE TREATMENT OF ACUTE CASES

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The bioholographic qigong digital pressure therapy is a new way in combining the digital pressure therapy with the bioholographic therapy. The bioholographic acupoints of the human second metacarpalia radius side and the shin flank are regarded as the main points for diagnosis and treatment or local massage was applied. The author has applied this method to 200 acute cases, among which 131 cases were cured (65.5%); 46 cases noticeably effective (23%); 19 cases improved (9.5%); 4 cases failed (2%). The total effective rate was 98%.

The bioholographic therapy stems from the holography of traditional Chinese medicine. Its principle of treatment is the magnetic oscillation effect of the body's biological field which can adjust the information feedback of the whole body through holographic acupoints. Qigong has the function of exciting qi, stimulating the circulation of blood and causing the muscles and joints to relax, regulating qi and blood and balancing yin and yang. The combination of the bioholographic treatment with digital pressure to acupoints will greatly increase the effect, release patients' pain. Such method is easy in operation under any circumstances and is worth popularizing.

2—23 THERAPEUTIC EVALUATION OF 60 HEADACHE CASES DUE TO STAGNANCY OF QI AND BLOOD TREATED BY QIGONG

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This paper shows that it has got better effect in treating 60 headache cases due to stagnation of qi and blood treated by qigong exercises. Among them, 42 cases were healed (70%); 19 got obvious effect (17%); 8 were better than before. The total effectiveness was 100%. The patients were treated 5-30 times, with an average of 19. Compared with the treatment at the same time in 30 cases via Western medical therapy, it shows very outstanding differences in statistics. 42 of the 60 cases have been followed up and interviewed for one year, and there was no recurrence. It suggests that this therapy is safe, effective, without side-effect, and worth popularizing.

2—24 A REPORT ON THE PREVENTION AND CURE OF YOUNGSTER HYPOMETROPIA BY QIGONG

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To counteract the tendency that the rate of youngster hypometropia getting more and more, we've created a qigong set to prevent and cure youngsters' hypometropia, based on the theory of traditional Chinese medicine. Attention is paid to the whole function and local function.

The treatment consisted of the emitted qi therapy and self-practice of qigong exercise, so to succeed faster. The long-term effect is better than the short-term one. Two semesters later, it was found the complete cure rate was 48.75%, the total effective rate was 95%. Under this qigong treatment, the eyesight of patients improved by an average of 0.34. At the same time, the normal eyes remained normal and most cases improved by an average of 0.15. The exercise was done once a day for half an hour.

This treatment is not only safe but also simple and easy to learn.

2—25 PRELIMINARY OBSERVATIONS OF 9 CASES OF SJOGREN'S SYNDROME TREATED MAINLY BY "KONG JING GONG"

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Sjogren's syndrome is one of autoimmune diseases. Its incidence inclines to increase in recent years. There is no specific treatment for it in Chinese and Western medicine at present. In order to explore the treating effects of qigong for this disease, the "Kong Jing Gong" Training Course was held from Sept. --Dec. 1992. 9 cases of Sjogren's syndrome were treated and a certain curative effect was obtained.

1. Observing subject: 9 female cases had typical clinical manifestations and diagnosed by parotid contrast and labial glands biopsy. Of them the minimum age was 41 year-old, the maximum age was 67. The shortest course of disease was 2 years and the longest was 17 years. The Chinese herbal preparation SS-I for tonifying Qi and Nourishing Yin had been taken for 4--10 months before the qigong exercise was given. Because the curative effect of Chinese herbs was not satisfactory, Chinese herbs in combination with the qigong therapy were applied during the observation.

2. Treating methods: "Kong Jing Gong" is mainly given combined with massage on several points. The patients did the exercise 1--2 times each day, 30 minutes for each time, a treat-

ing course lasted for 3 months.

3. Standard of curative effect; Marked effect: Two of the main clinical manifestations (dry mouth, dry eyes, joint pain) significantly reliving or neary disappearing.

Improvement; Two of the main clinical manifestations relieving or one markedly relieving. Failure; No relief or aggravation of the main clinical manifestations.

4. Treating results; The results showed that 3 cases were markedly effective, 6 cases were improved. Of them 2 cases were cured. The symptoms and signs of parotid swelling, dry nose, dry cough, shedding tongue coating and cracking tongue proper of some patients also abated or disappeared. 4 cases were followed up for 4--5 months, of which 2 cases remained steady. The symptom of dryness of mouth and eyes of the other 2 cases further relieved.

5. Discussion; Sjogren's syndrome is one of refractory diseases. Although a certain achievements had been obtained in treating Sjogren's syndrome with Chinese medicine in recent years, the curative effect of some cases was not satisfied. The results in this article showed that treating Sjogren's syndrome with the qigong therapy had certain specific curative effect, which provided a new way for exploring a new effective method to treat Sjogren's syndrome. "Kong Jing Qigong" has the characteristics of simplicity and convenience, safety and absence of side-effect.

2—26 SEVEN TESTS OF THE YUAN JI GONG APPLIED TO DEAF-MUTE TREATMENT

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Since November 1990, 7 training classes of Yuan Ji Gong for the deaf-mute people have been completed in Beijing and Tianjin. 286 deaf-mute patients took part in the classes. Among the students, the youngest was only two and a half years old, the oldest was seventy-five years old. Their problem was caused by various reasons.

After 30 hours training and treatment, more than 40 percent of them showed signs of recovery, and 11~14 percent recovered remarkably.

The fact shows that Yan Ji Gong is a gospel for the deaf-mute people.

2—27 MONILIASIS TREATED BY THE EMITTED QI AND ACUPUNCTURE THERAPY

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Moniliasis is produced by imbalance of thallus in the body due to abuse of antibiotic-

s. The disease may last over 25 years and it is estimated that 20% females contract it. The population is increasing and it is difficult to cure.

Moniliasis are marked by various symptoms. Traditional Chinese medicine holds that it is caused by lower body resistance, abundant pathogenic dampness. Then the treating principle aims at strengthening the spleen, removing dampness, soothing the liver and regulating qi. As a result, the body resistance is improved and pathogenic factors eliminated. Some patients are allergic to herbal medicine. So a comprehensive therapy including the emitted qi and acupuncture is employed to get good result. The report is as follows.

There were 56 female cases, aged from 18-65. The disease course was from 2-25 years. Before consultation, they had been treated by various therapies without satisfactory effect. In the first period, acupuncture was the main approach and qigong the second. In the later period, qigong was adopted as the chief therapy. The following two groups of acupoints were alternately selected with modification. 1. Zusanli (St 36) (reinforcing), Zhongwan (Ren 12) (reinforcing), Shangjuxu (St 37) (first reinforcing, then reducing), Qihai (Ren 6) (reinforcing), Fujie (Sp 16) (reducing), or Zhaohai (K 6) (reinforcing), Xinfeidian (reinforcing), Neiguan (P6) Zhongji (Ren 3) (first reducing, then reinforcing), Sanyinjiao (Pp 6) (first reducing and reinforcing), Shuifen (Ren 9) (reducing), Fengchi (G20) (reducing), Yanglingquan (G34) (first reinforcing and reducing).

2. Pishu (B20) (reinforcing), Weishu (B21) (reinforcing), Dachangshu (B25) (first reducing then reinforcing), Feishu (B13) (reinforcing), Shenmen (H7), Shenshu (B23) (reinforcing), Ciliao (B32) (reducing), Jiannao (reinforcing), Ganshu (B18) (first reducing then reinforcing). The emitted qi therapy: The patient was in a lying position, sitting or standing position. Eyes were closed and body relaxed. Qi was emitted to the above points. Criteria of the effect: Care; Disappearance of symptoms, no mold: 32 cases (57.14%); Marked effect; Symptom relieving greatly: 16 cases (28.57%); Better effect: 5 cases (8.93%); Failure; No change: 3 cases (5.36%)

Because the regulating function is strengthened, the body resistance is improved and pathogenic factors eliminated. That is why the disease is cured or treated.

2—28 DEVELOPMENT AND APPLICATION OF A SERIES OF QIGONG FEEDBACK TAPES

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About 10 kinds of qigong feedback tapes in Chinese, English and Japanese were de-

veloped with the Chinese folk music, combined with the western biological feedback technique. Six kinds of tapes are introduced here.

I. Skin temperature qigong feedback tape: By using a skin temperature feedback equipment together with listening to the skin temperature qigong feedback tape we had trained 50 healthy persons, 31 qigong exercisers and 110 patients. The result indicated that temperature at Laogong(P8) raised by 1-2°C in each group suffering from vegetative nerve functional disturbance, their headache and insomnia were evidently relieved too.

II. Blood pressure qigong feedback tape: Side A and Side B of this recorded qigong set for decrease or increase of blood. 50 cases of hypertension and 70 cases of hypotension were trained with this tape once a day. The result suggested that this method had a diphasic regulatory effect on the cases with hypertension and hypotension (stage I, II) through 1 to 2 courses of treatment.

III. Body-weight loss qigong feedback tape: This tape was made up according to Zhang Yuling's "three step skills," such as "frog skill" and so on. 26 cases of obesity were trained once a day through listening to this tape. The result suggested that the average loss of body-weight for each was 5.22kg in ten days and ketone bodies appeared in the urine of 80% cases with obesity.

IV. Strengthening yang qigong feedback tape: Side A and Side B of this tape are skill for strengthening the body resistance (one's will is concentrated on Dantian and the pubic region) and skill for strengthening kidney-yang (one's will is concentrated on the Gate of Life and perineum) respectively. 12 impotence cases were trained once a day. 7 cases of them recovered the erectile function and their HCG levels were raised in three months.

V. Eye qigong exercise feedback tape: 8 sets of eye qigong exercises were made up according to the open-close eye qigong and eye regulatory function. The observations on 458 cases with myopia suggested that the total effective rate was 75.6% and there was a dependent relation between the result and the changes of their rheoencephalogram and orbital skin temperature.

VI. Senile qigong health music tape: The brain waves of the senile people who persisted in listening to this tape tended to synchronize and their HR, Bp and BMR were also reduced. This indicates that people who listen to this tape are in the status of low energy assumption.

2—29 HEALING WITH QI MAGNETIC TAPE—A NEW DEVELOPMENT IN QIGONG HEALING

Jack Lim
Australia

Using qi music tapes for healing is a new development in Australia and is now being used by more and more people, some using them for pain killing, others using them to deal with sleeplessness, or clearing the heat pathogens in the liver and a host of other prob-

lems. For many this has been their first contact with qigong, and they go on to seek training in qigong. Thus this has also fostered a new wave of learning qigong in Australia. This precisely had been what I had hoped for when I first made these tapes.

Five years ago when the Jack Qigong Healing and Research Centre was set up in Australia as the first of its kind in the country, I was very glad to find that the patients responded very well to the healing, with 98 per cent positive results and approximately 80% very good response. This is indicative of the results in back pain of various kind treating over six hundred patients in this area, with three cases avoiding surgery. My healing is mainly by sending the healing qi through the mind.

The effect of the qi message in the tape on the patient is the same as that when sent by the qigong master in the same room with the patient. The benefit of it that qi healing is no longer restricted to the time and place the master is available. Also the music itself increases the effect helping to balance the emotions. Some assisting indirectly in the healing balancing the emotions and harmonising, while others deal directly with qi flow in the body and have a marked effect, as bringing about expansion of the chest and bringing sleep to the patient.

We are planning to other countries, so that it may play an ever bigger role in saving people from their trauma and illnesses and help more and more people come into contact with qigong.

2—30 A SURVEY OF 100 DOCTORS USING SIMULATED QIGONG IN THE USA

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Many thousands of treatments are provided every month by doctors across America using a simulator of emitted qi. The results, while not as dramatic as those of the leading qigong masters in China, are none-the-less, consistently valuable to the recovery of a wide variety of patients. A study of these results reveals similarities and differences between the emitted qi from a master and that from the simulated qigong device.

The device used was developed at the China National Institute of TV and Electro Acoustics and is marketed in the USA under the name "Infratonic QGM." Unlike the emitted qi from a master, simulated qi is consistent from machine to machine and from treatment to treatment. This allows us to analyze the observations of many doctors who use the device to draw conclusions as to how it varies from that of qigong masters and how it can be best used in a medical setting. The following is based on a survey of more than 100 doctors who use the simulator regularly in their practice. Conclusions are as follows:

1. Patients feel very relaxed after using the simulator, supporting the findings of Professor Liu Guolong as presented in the First World Conference for Academic Exchange of Medical

Qigong (FWCAEMQG) which showed that, like the emitted qi, the simulated qi creates a state of enhanced alpha power spectrum in the EEG. Alpha is known to be related to deep relaxation and focused concentration.

2. Patients report that they obtain greater energy and clarity of thinking. Specific symptoms diagnosed as qi deficiency, such as difficult breathing and chronic bronchitis (deficient lung-qi) and nausea and diarrhea (deficient digestive qi), were consistently relieved of these symptoms. This supports both the contention that qi can be transferred to patients and that the device simulates an aspect of the emitted qi.

3. Doctors consistently reported that the simulator softened muscles, facilitating the repositioning of vertebrae and deep muscle manipulation. They also reported that vertebrae repositioned in this way were more likely to remain correctly positioned. This is an example of neuro-muscular re-education and might be attributed to facilitation of nerve communication to the brain achieved by the simulated qi.

4. While there have been many reports of relief from pain and nausea in cancer patients, the simulator is usually used with other therapies, so no conclusions can be drawn as to its effectiveness. Thus the findings of Professor Feng Lida as reported in (FWCAEMQG) that simulated qi can be effective in treating leukemia in rats were not supported in this survey of clinical applications.

5. Patients suffering from chronic fatigue and opportunistic infection have consistently shown improvement using the simulator. This supports the results of Dr. Lu Yanfang, the inventor of the device, that antibody production was several times higher in rabbits treated with the simulator than in the control group.

Summary: While the magnitude of the improvements was generally less than reported by the famous qigong masters in China, there is a distinct shortage of masters in the USA, and thus, most Americans must settle for a lesser therapy. A second deficiency of the simulator is that it lacks diagnostic capabilities. While a qigong master can often pinpoint a disease and direct the emitted qi precisely as required for optimal healing, a simulation device is simply a tool. Despite its limitations, the simulator has an application in the USA because there is an acute shortage of qigong masters. Until programs are well on their way to train many doctors in medical qigong, patients will have to rely on the simulator.

2—31 A STUDY OF THE TREATMENT FOR SLIPPED DISK

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There is no medical term for the so called "slipped disk". In Japan, it is called "gikkuri-goshi". The mechanism of the slipped disk is still basically unknown. The only thing which is known is that the intervertebral disk is pinched in between the vertebrae.

This paper deals with a short (1-3 min) treatment for the slipped disk, developed by the Japan Qigong Seitai (Japanese martial art's qi-resuscitation and Chinese qigong) clinic.

First, the therapist should find out the location of the slipped disk, should have the patient lie down supine and should inject qi to the points "Zhongfu (Lu, 1) at the upper chest. Second, qi should be injected into the points Xuehai (Sp1) above the knee joints.

The upper body is fixed to a therapeutic bed with belts which should be put around the arms. The legs are then pulled straight following initial bending of the knees. The legs, more precisely, are pulled slightly upward. This pulling is repeated two or three times.

After the pulling, Back-Fixing Qigong and Radiating Qigong are applied to the patient, who is now lying on the floor, in order to release the concentrated qi to the low back. The released qi is radiated to the entire body and moves all the muscles of the body. As the muscles move, the intervertebral disk tries to move back to its original place. It reduces pressure to the nerve fiber and consequently reduces the low back pain. Now the patient can bend the body forward and backward. It is to trigger the natural healing power of oneself.

As many as seventy percent of all clinical cases (above 2000 cases) are treated successfully by one to three treatments. Successful treatment is seen in about fifteen percent by four to five treatments. Improvement is seen in about five percent. No improvement is observed in about five percent of the patients. The remaining five percent of the patients discontinued the treatment at our clinic, and no further information was obtainable. Therefore, ninety percent of the clinical cases were improved by the present treatment. If it is the first occurrence for the patients, nearly all gikkurigoshi is improved.

This treatment is only used for the contact qigong (kikatsu, in Japanese terms) in the Japan Qigong Seitai therapy. It is quite hard to apply this method to the Noncontact Qigong therapy.

2—32 CHRONIC SOFT TISSUE INJURY RESPONSE TO QIGONG THERAPY

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Our report is about a 30 year old female with a small palpable mass 3 to 4 human inches proximal to the right knee articulation on the anterolateral aspect of the femur. The patient reported a traumatic injury to this area approximately 60 days earlier.

On March 8, 1993 the patient was treated with the qigong therapy for the first time over the area of trauma for 10 minutes. She subjectively reported a "warm feeling" over the area and also a "tingling and warmth" extending down her right leg. She returned for treatment on March 17, 1993 and reported an 8-day relative absence of pain even with an increase in ac-

tivity. She now is on a 3-week schedule of therapy and is progressing well.

2—33 THE BASIS OF QIGONG NURSING

Komatsu Hirochi(Japan)

The development of modern medicine has prolonged people's average life span, but the daily allergic reaction, depression, etc. make many people suffer. In view of the experience of psychiatric nursing I happen to think about the cure process of a disease. Taking the qigong therapy and psychology as the basis, through the exchange of therapies of acupuncture, digital pressure, and the whole body, the preventive medicine based on the integration of traditional and modern medicine has been developed. Depending on self capacity qi and blood circulation can be strengthened, thus healthy psychosomatic condition is attained. Operation: Quiet qigong (relaxation, in standing posture); dynamic qigong (movement towards 6 directions). In the initial stage, relax oneself entirely, qi feeding varies in individuals. Tempo, time of the exercises are determined by one's physical condition.

The theory of qigong is the essence of traditional Chinese medicine. (Man is the miniature of the universe). It is an integrated body from molecules to space. We must attach the significance between man and universe. Diseases are caused by disturbance of qi. Qi is the fundamental energy of man. The characteristics of qigong lie in its persistent practice.

The nursing staff must be friendly to patients. They should have calm minds, control their emotional activity. Give others love and sympathy. Absorb power from the "doctor-patient" harmony.

2—34 THE LUOHAN SYSTEM OF QIGONG

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The Luohan System of Qigong described in this paper is a Buddhist-Medical school of qigong from the Shaolin Temple that has passed down from generation to generation inside the Chen's Family of Guangdong and is part of a larger system known as Choy Lee Fut—widely known for its Martial Arts exploits. It is comprised of four parts or sets of exercises. Although the four forms of the system use relaxation, and the control of the breath and the mind to direct the flow of qi through the meridians, each one of them has very specific characteristics:

1. The 18 Luohan Hands : -Sub Bak Luohan Sau

These are very vigorous exercises that strengthen the bones, muscles and tendons, drain the channels and improve the circulation of blood and qi. Bodhidharma or Ta Mo is the cre-

ator of these movements that have survived the test of time.

2. Little Luohan-Siu Luohan

This set of movements are more rounded and softer than the first one and emphasize the use of breath to generate qi. It incorporates stationary postures at different points of the form. Out of stillness movement is born, and out of the flowing movements stillness is cultivated.

3. Great Luohan-Tai Luohan

This form is executed sitting cross legged with arms in different "mudras" or postures. The mind coupled with the breath is used to focus qi at vital points of the body.

4. Without Ultimate-Wu Chi

The fourth and final form is a combination of the previous three. Stillness of mind is blended with movement of the body, the fast flows into the slow. It is a reflection of the cosmic dance of creation where ying and yang—the universal opposites—interact to form the myriad phenomena and entities of the universe.

2—35 EIGHT FORMS-QI-THERAPY

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The physical constitution of human body can be classified into eight groups by special implements, namely "Eight Forms".

Medical Treatment of the eight forms of human body by qi maximizes the treatment effect by taking food suitable to his constitution and by putting qi into the vital parts of the body or sticking the seeds containing qi suitable to his constitution on the vital parts. Vitality in the seed goes into the body and the seed takes out the poisonous gas from the body. Therefore the Eight-Forms-Qi Therapy won the world Peace Prize and it is better and safer than acupuncture.

It can be used anytime, anywhere and to anybody.

3. Research on Qigong Theory

3—1 THE THEORY AND METHODS OF THE TRADITIONAL TRAINING OF THE BODILY INTERNAL FUNCTION

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The traditional training of the bodily internal function is the highest level of the qigong technique, and a rebuilding of human life. The author, based on her long period study, has found that the traditional training of the bodily internal function, by taking the human body as its basis, is a life science. Its theory and method are very simply, just as the Taoism says "Truth in the universe is always the simplest." The paper elucidates the origin, theory and method concerning the traditional training of the bodily internal function. The paper points out that its theory covers two aspects: (1) The whole process is based on reversion of the biochemical change of yin-qi and yang-qi, or is to establish the reverse reaction system of the biochemical change in the human body through qigong exercise. The key point lies in the replacement reaction of the life substances in the cerebrum and reproductive system. (2) The whole process is to reverse the chemical change of yin-qi and yang-qi. It is an easy approach, i. e. without thinking, without doing anything and completely entering an unconscious state, allowing the reverse reaction system of the body plays its role automatically. The Chinese specialists in this field in ancient times believed that eternity was a special feature of life. There is only one route to eternity, i. e. shutting all accesses to outside stimulations. Under an unconscious and non-feeling state the life mechanism of eternity may automatically starts to work.

The paper discusses the four stages in the traditional training of the bodily internal function. The first stage: Purifying consciousness, reducing working, strengthening the reproductive and nervous systems. The second stage: Qi turning from the reproductive substances travelling along the Ren and Du Meridians, realizing the replacement reaction of the cerebral life substances and reproductive substances in the molecular level. The third stage: Qi activity of the five zang-organs, their replacement, and turning to the same primordial qi. The fourth stage: Cessation of pulse beating, breathing and organic life process, but having strong biochemical reaction on the molecular level, big changes taking place in bodily molecules, tissues and organs, then rebuilding of life. It takes about 3 years to complete the whole process, according to the ancient specialists.

It is pointed out by the *Canon of Internal Medicine* that only those who have completed the whole process are known as true men.

3—2 INFLUENCE OF THE STUDY OF THE "BOOK OF CHANGES" ON QIGONG

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This article deals with the influence of the study of the "Book of Changes" on the formation and development of Chinese qigong. It is explained in three aspects: the "Taijiyinyang System Theory", "Eight Diagram Information Theory", "Heluo Mathematical-Physical Qi Activity Theory".

The "Taijiyinyang System Theory" points out taiji is the basic source of all things. Yin and yang are roots of changes. Taiji is an integrated whole of the universe and things in the heaven and earth are the small systems of the major system. The revolution of the small systems has their own features, but they are all in the major system. Chinese qigong is influenced by the study of the "Book of Changes", then it emphasizes its training guided by taiji.

The "Eight Diagram Information Theory" says all things in the heaven and earth are included in the eight diagrams. The divinatory symbols reflect the quantitative changes to qualitative changes. The Taoist Qigong School attributes much to the eight diagrams and they become the theoretical foundation of the Taoist Qigong.

The "Heluo Mathematical-Physical Qi Activity" refers to arrangement of numerals recorded in the Heluo drawings and writings which tells the secret of the changes of the heaven and earth. The Heluo mathematical-physical phenomena reflect the law of qi activity. Traditional qigong depends on numerals. The qi activity of the human body corresponds to the phenomena of mathematics and physics.

The above three forms the rocks of Chinese qigong.

3—3 "ZA BING YUANLIU XI ZHU"—AN EXPLORATION OF THE ANCIENT QIGONG

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This book was written in the 38th year of the Qian-Long Reign, Qing Dynasty (1773 A. D.) by Jin Aosheng, a scholar good at qigong therapy research. He thought qigong exercises were for longevity but they were in fact the therapuetic methods, able to aid the herbs to cure some knotty cases. He affirmed the particular effect of the qigong therapy.

In the first chapter of the book, there are seven general principles: "Guiyuan", "Zhoutian", "Kengbei", "Xingting", "Tongguan", "Toufa" and "Dihui". After an introduction

of 46 diseases, various qigong methods and ways of practice were mentioned, involving not only for windstroke, tuberculosis, ascitis and difficult in swallowing, but also some common diseases, e. g. , headache, diarrhea, etc. These methods are just what we intend to develop from the ancient qigong and to study. Nowadays, the qigong therapy is indicated mainly for rehabilitation of chronic diseases. Some acute cases, such as fever caused by common cold is not its indication. But in this book, there are some recordings about qigong exercises for common cold and ascites (especially for cirrhosis of the liver). The main idea of the method is to keep free circulation of qi in the body.

The effect of these methods has been proved by modern clinical practice.

3—4 QINGONG, AN INDISPENSABLE BRANCH OF TRADITIONAL CHINESE MEDICAL SCIENCE

Zhao Bangzhu

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On the basis of a 10 year's study of Daoyin in *Zhu Bing Yuan Hou Lun*, one of the most important TCM classics, the author tries to make some analysis on the main problems in the development of medical qigong and proposes certain preliminary solutions to them.

To meet the needs of prevention and treatment of diseases and preservation of health, the ancestors of the Chinese people evolved medical qigong and made it a part of TCM science long ago, and ancient qigong exercisers and scholars contributed considerably in the development of TCM. Qigong was already a branch of TCM science as early as in the Sui Dynasty. However, why has it been neglected ever since and why is it today even still in want of common support from TCM doctors throughout China and official approval from authorities in charge of public health at all levels.

Apart from a brief review of the developmental history of medical qigong, the present article begins with an earnest study of *Zhu Bing Yuan Hou Lun*, discusses the academic level of medical qigong in the Sui Dynasty and analyzes the problems that hinder its application and development today.

In *Zhu Bing Yuan Lun*, an important TCM theoretic classic on syndrome differentiation posterior to *Huang Di Nei Jin*, the writer puts aside such topics as TCM prescriptions, acupuncture and moxibustion, but collects or records plenty of systemic Daoyin methods. This shows the great importance of medical qigong in TCM at the time of the Sui Dynasty and the writer's high evaluation of it.

There are 213 Daoyin methods recorded in the treatise. By descriptions of treatment of 113 diseases with these methods, the writer gives in the book an introduction to clinical application of medical qigong to internal medicine, surgery, gynecology, pediatrics, infectious diseases, parasitism, ophthalmology, otorhinolaryngology, etc. This proves that medical qigong

had long been widely used before the Sui Dynasty in TCM practice.

Academically, medical qigong recorded in the treatise includes not only three regulations (regulation of mental activities, regulation of breathing and regulation of posture) in modern qigong exercises but also methods of conducting and directing qi to travel along certain routes within the body.

In addition, treatments with medical qigong recorded in the treatise are all based on an overall analysis and differentiation of symptoms and signs, the unique excellent tradition in TCM practice.

These features have made it clear that medical qigong has proved itself a branch of TCM science. Long-term application with satisfactory results, has also provided enough convincing support to this argument.

However, most of the methods of practising medical qigong in the treatise are given without proper terminological names and this gives rise to difficulties in application, inheritance and academic exchange. (The author of this article has tried his best to supply proper names for these in his *Treatment of Diseases with medical Qigong in Ancient Times*. Moreover, there seems to be not enough successors today who are well learned in medical science, best skilled in practising various qigong exercises and richly-experienced in giving qigong treatment on the basis of an overall analysis and differentiation of symptoms and signs. This lack of competent successors is the key problem that must be solved soon; it may also be the chief difficulty in management of medical qigong practice for related administrative offices.

The author, therefore, proposes that a one year program about Daoyin methods in *Zhu Bing Yuan Hou Lun* be opened for these promising qigong exercisers or doctors to learn to master all the methods described in the book to give qigong treatment based on an overall analysis and differentiation of symptoms and signs. This will enable them to become competent qigong masters capable of summarizing experiences and developing this unique therapy, this enlivening medical qigong once again and restoring it to its due position at a branch of TCM science. The author of the present article will spare no effort to reach this goal and be delighted to co-operate with any colleagues who are willing to show the same enthusiasm.

3—5 XUAN GUAN AND XUAN GUAN EFFECT——A STUDY OF THE EFFECT AND MECHANISM OF DELAYING SENILITY BY PRACTISING "WANG SONG-LING KEEPING FIT METHOD"

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"Xuan Guan", also known as Xuan Guan Qiao (Xuan Guan Knack)" or "Xu Pi Men (Xuan Female Gate)", is considered, from the viewpoint of traditional Taoism, as a correct path

to follow. Once "Xuan Guan" is accomplished, "Dan Ji(good foundation)" will be laid; then it will be able to achieve success one way or another by going on to cultivate oneself. Therefore, those who practise qigong hope to achieve "Xuan Guan". To achieve "Xuan Guan" is also known as "Kai Wu(enlightening)" in Buddhism, a lofty realm to attain during practising qigong. In this realm, both physiological and pathological processes are reversed simultaneously, diseases cured immediately, physiological process rejuvenated and latent instinct in the human body aroused.

As to the method, realm and effect of practising "Xuan Guan", opinions vary between different schools of thought. In his "Sequel of Dao Zhang", Min Yi-de expounded repeatedly the mechanism, method and realm of "Xuan Guan". He pointed out directly that the method of "Xuan Guan" consisted in the word "forgetting," i. e., "to forget again and again, Xuan Guan is thus penetrating. Practising "Wang Song-ling Keeping Fit Method" one can readily get into the state of "forgetting", and further to attain the realm of opening "Xuan Guan Knack".

This method lays stress on opening the upper and lower "Xuan Guan". It has been found by observation that about 10 percent of those who persisted in practising qigong in this way 4 to 6 hours a day from one to three months or more can attain the "Xu Guan" effect. As for the realm of achieving "Xuan Guan", responses vary owing to individuals' differences; but there are many aspects in common, which can be summarized as six words: "forgetting, arresting, exploding, lightening, passing and returning", i. e. getting into the state of forgetting, respiratory arrest, exploding feeling in the brain with the presence of halo, meridians in the body cleared and activated, and rejuvenating physiologically.

There are three fundamental factors in the achievement of "Xuan Guan" (1) Correctness of method (2) Differences between individuals (3) Efforts made to practise qigong. After the realm of "Xuan Guan Knack" has been attained by practising qigong of Taoism, diseases will be cured and rejuvenation occur. This has been fully proved by the changes of clinical and physiological indexes after achieving open of "Xuan Guan". This change results from the process of quantitative change to qualitative change, owing to the accumulation of energy within the body during the period of practising qigong. When qi goes up to the brain, the cerebral energy increases obviously and the central nervous system is well coordinated and in a nonrandom state, which makes for giving full play to congenital instinct in the body. Not only does self-restoration take place, but physiological and pathological processes get reversed essentially, and psychological process changes too. This is why diseases are cured and rejuvenation takes place after "Xuan Guan" is achieved.

3—6 ON ORIENTAL ENLIGHTENMENTOLOGY & THE WAY OF ROOT-BACK

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A new theory and technique of Chinese qigong will be discussed in this paper, which is a result of the study of Taoist and Buddhist qigong in terms of psychology.

It is understandable that a tree has its root, but it is not understandable that a person has his "root" either. Every person has his own life experience. Each of the experience can become a mass of information, called "Root Complex", laying in the body. A person's root is made up of such uncountable Root Complexes. The concept of Root Complex is much wider and deeper than that of Sigmund Freud's "Complex" for the Root Complexes of a person are not only from individual, but also from his parents, from his ancestor, even from every step of human evolution. The evidence can be found in qigong practice.

Among so many Root Complexes, a lot of them are not in order. For this reason people usually cannot fully develop his own personality. A special way of putting Root Complexes in order was found thousands years ago by Chinese ancestors to help people perfect himself. That is Chinese qigong.

Qigong is complying with a kind of human instinct—Back to Root which means returning to the source of life and to the source of universe. The Back to Root consciousness exists commonly and potentially in human beings. Human's Back to Root consciousness needs an expression, which is the process of putting the Root in order. The primitive way of the expression of human's Back to Root consciousness is sorcery or religion and the modern way of that is Chinese qigong. Qigong helps people eliminate the interference with Back to Root consciousness from the concepts forming in the development of human consciousness. To transcend all the concepts means "Enlightenment", the super experience of human, with which the person's Root Complexes can be thoroughly putting in order and his potential power can be fully developed. In this sense it is reasonable that Chinese qigong may be under the name of "Oriental Enlightenmentology".

"The Way of Back to Root", including some important principles and techniques, is from the study of the Taoist and Buddhist qigong, that would be helpful for people to get the super experience—enlightenment, and rebuild his personality to make himself more useful for the society. In this sense the Way of Back to Root can also be called "Personality Rebuilding Engineering".

3—7 EXPLORATION INTO THE TREATING EFFECT OF QIGONG MUSIC

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We will discuss here about two models which may be formed in the musical therapy, i. e. the aspects of the general and the characteristic.

In the characteristic musical therapy (CMT), i. e. as referring to a comprehensive musical treatment model, it belongs conceptionally to qigong musical synthetic therapy.

The extraordinary mental therapy indicates some kinds of species coming from the therapeutic practice of voice in silent chanting, and also words of incantation in chanting with postured hands, and in the practice of therapy by praying with belief.

The essence about this kind of therapy is "an inner-vision for breath," "energy for voice", and a "guidance for consciousness", focusing on the patients with such kinds of versatile information response, or it is so called holographic response embodying physiological and mental aspects.

The characteristic musical therapy can help patients to discover the potential energy, promoting them to self-understanding, and to a more great satisfaction with such treatment they have taken.

Music has such qualities as its physical, physiological, or super-psychological characteristics, i. e. music has both morphological and gymno-type characteristics, and it has also an amorphous of no specific shape, or formless crypto-type characteristics. In the field of CMT, it is said, we can combine the above two types of music therapy into the re-discovery of the ancient therapeutic theory, and to the present followers, it will deepen this subject and widen the scientific area of medical qigong research and human body research.

In the process of development of modern musical therapy, a peculiar kind of human voice has been found. To humanity, the recognition and command to such kind as to apply in the present day medicine is most crucial to (CMT) the research of musical therapy.

In ancient witch culture, music-making, singing and dancing were able to cure illness.

3—8 THE LEVEL OF CIRCLE OF QI

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The key problem of the research on the levels of the qigong state is how to make a correct judgment. There is no scientific detection systems and the detection usually depends on self-consciousness and the descriptions in ancient medical classics. It affects the populariza-

tion of qigong exercises and often makes confusion.

The author advocates the production of qi and connecting between the Ren and Du Meridians is the criterion for the judgment of the qigong state. There are 5 levels of circle of qi, i. e. (1) Internal qi starts to produce; (2) Warm at Dantian; (3) Beating between the heart and kidney; (4) Minor circle of qi; (5) Major circle of qi.

3—9 THE DEVELOPING TENDENCY OF CHINESE MEDICAL QIGONG IN CONTEMPORARY TIMES

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In recent years, we have investigated into the cause of the side-effect in qigong exercises and the pathogenesis, and the clinical application of medical qigong. Since 1987, we have admitted 200 cases of side-effect in qigong exercises. It is found there are many factors causing the side-effect, but the misunderstanding of "mental and qi harmonization" is the common problem.

The process of qigong exercise is in fact a transition from "shi shen" to "yuan shen", from "turbid qi to genuine qi." This kind of transition may have its orderly process, known as "foundation laying". When the "turbid qi" is not removed, the qi concentrated at the Dantian area or other parts is a kind of turbid qi, which is unstablized in the body. It may bring about disturbance when the exerciser encounters some unfavorable external factors, such as frightening, anger, "too much mind concentration," etc. Sometimes, family or individual psychoic history causes the disturbance. When the turbid qi travels along the Du Meridian to the head, psychosis occurs in severe cases, or there has a feeling of heavy pressure on the head in mild cases. If the turbid qi escapes from meridians, there may be a distending and numb feeling of the body. How to avoid such side-effect? We have developed a new medical qigong system according to the ancestors' experience. Here is a brief account.

Positive health depends relative equilibrium between the five zang organs. No matter what qigong school it is, the chief task of medical qigong is to regulate the five zang organs, dredge meridians and cultivate "essence, qi and mentality" To guarantee the process going smoothly, it is necessary to have a foundation laying process.

3—10 PRACTISING QIGONG AND CULITIVATING MY MORAL CHARACTER—MY 60-YEARS' REALIZATION

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I am 80 years old now . My work is to treat patients with the emitting qi and I go to work every day.

I have been practising qigong for 60 years. For my realization, practising qigong has two main aims, i. e. (1) Keeping fit bodily and mind (2) Developing one's cognitive ability.

Qigong exercises can adjust balance of yin and yang via nourishing yin and calming yang. Hence, it has the function of healing, keeping fit and prolonging life. This is the lower level of qigong.

Developing cognitive ability is to top one's mind potentials. At the same time, I have discussed the basic theory and important methods of practising qigong in the paper.

3—11 A BRIEF ACCOUNT OF DAOYIN QIGONG

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This paper systemizes and formulates, from the angle of Chinese medical literature, the ancient Chinese qigong treatments for the internal organs. There are three main points: (1) Different qigong methods are indicated for different organs. (2) Each of the qigong methods must be according to the seasons, directions as well as five colours. (3) Even to the very same organ, the qigong treatment must be different because of different conditions.

This paper introduces seven influencial Daoyin exercises, indicated for the five organs.

The purpose of the paper is to offer some reference ideas and methods for further research on the qigong treatment according to correct diagnosis.